

DuPont™ ISCEON® 9 Series

REFRIGERANTS

Product Information Bulletin

DuPont™ ISCEON® MO79

ISCEON® MO79 is an easy-to-use, non-ozone depleting HFC refrigerant for replacing R-22, R-502, and HCFC-containing refrigerant blends (e.g., HP80, HP81, R-408A) in medium and low-temperature commercial and industrial direct expansion refrigeration systems. ISCEON® MO79 is compatible with traditional and new lubricants, in most cases no change of lubricant type during retrofit is required. ISCEON® MO79 is an easier retrofit option than R-404A.

ASHRAE #: R-422A

Applications

- Medium and low temperature commercial and industrial direct expansion refrigeration, including
 - Food service
 - Supermarket display cases
 - Food storage and processing
 - Ice machines

Benefits

- Provides easy, quick cost-effective retrofits:
 - Replaces: R-22, R-502, and HCFC-containing blends (e.g., HP80, HP81, R-408A)
 - Easier retrofit than R-404A and R-507
- Non-ozone-depleting HFC
 - Not subject to phase-out under the Montreal Protocol
- Compatible with AB, MO and POE lubricants
 - In most cases, no change of lubricant type is needed
- Enables continued use of existing equipment
- Non-flammable. ASHRAE safety classification: A1 (same as R-22, R-502, and R-404A)
- U.S. EPA SNAP accepted for a broad range of refrigeration applications
- Significantly lower discharge temperature than R-22
 - Likely to prolong compressor life
- Low toxicity (similar to R-22, R-502 and R-404A)
- 20% lower Global Warming Potential (GWP) than R-404A and R-507
- Can be topped off during service without removing the entire refrigerant charge

Expected Performance After Retrofit

(Based on field experience, calorimeter testing and thermodynamic property data).

ISCEON® MO79 provides improved cooling capacity and energy efficiency over R-22 in many systems, especially at low temperature conditions. It also provides comparable cooling capacity and energy efficiency to R-404A. Actual performance depends on a number of system design and operating conditions. ISCEON® MO79 operates at significantly lower discharge temperatures vs. R-22.



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Discharge Temperature: °F (°C)

	At 40°F (4°C) evaporator temp.	At 0°F (-18°C) evaporator temp.	At -20°F (-29°C) evaporator temp.
R-22	204°C (96°C)	*275°F (135°C)	*275°F (135°C)
R-404A	163°F (74°C)	220°F (106°C)	252°F (122°C)
ISCEON® MO79	156°F (69°C)	208°F (98°C)	238°F (114°C)

* Assumes auxiliary cooling to limit compressor discharge temperature

System Conditions:

Condensing Temperature = 110°F (43°C)

Discharge Pressure: psia (kPa)

R-22	257 (1770)
R-404A	306 (2110)
ISCEON® MO79	308 (2120)

System Conditions:

Condensing Temperature = 110°F (43°C)

Evaporator Temperature = 40°F (4°C)

Cooling Capacity vs. R-22

	+40°F (4°C)	Evaporator Temperature 0°F (-18°C)	-20°F (-29°C)
R-404A	0–5% lower	5–10% higher	10–15% higher
ISCEON® MO79	0–5% lower	5–10% higher	10–15% higher

Retrofit Considerations

ISCEON® MO79 is compatible with traditional and new lubricants – mineral oil, alkylbenzene and polyol ester; in most cases no change of lubricant type during retrofit is needed. Oil return is determined by a number of operating and design conditions - in some systems with complex piping configurations, POE may need to be added. Minor equipment modifications (e.g., seal replacement) or expansion device adjustments or replacements may be required in some applications. Refer to the ISCEON® MO79 Retrofit Guidelines for details.

Product Composition

Component	Weight %
HFC-134a	11.5
HFC-125	85.1
Isobutane	3.4

For Further Information: (800) 235-7882

www.refrigerants.dupont.com

DuPont Fluorochemicals
Wilmington, DE 19880-0711

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