

# 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 low-temperature commercial and industrial direct expansion refrigeration systems (can also be used for medium temperature). 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

- Low temperature commercial and industrial direct expansion refrigeration (can also be used for medium temperature):
  - 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
- U.S. EPA SNAP listed for a broad range of refrigeration applications
- Significantly lower discharge temperature than R-22
  - Likely to prolong compressor life
- Provides improved cooling capacity over R-22 at many operating conditions with up to +30% at low temperature conditions
- Low toxicity (similar to R-22, R-502 and R-404A)
- 20% lower Global Warming Potential (GWP) than R-404A and R-507
- After retrofit, 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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## ISCEON® MO79 Performance Comparison in Refrigeration Systems

Performance with subcooling based on thermocycle calculations from calorimeter data and do not include heat transfer effects

	<b>Low Temperature</b> –25°F (–32°C) evaporator 105°F ( 41°C) condenser 65°F ( 18°C) return gas with 10°F (6°C) subcooling		<b>Med Temperature</b> 20°F (–7°C) evaporator 120°F (49°C) condenser 65°F (18°C) return gas with 10°F (6°C) subcooling	
<b>Performance vs. R-22</b>	<b>ISCEON® MO79</b>	<b>R-404A</b>	<b>ISCEON® MO79</b>	<b>R-404A</b>
Discharge Temperature, °F (°C)	–39 (–22)	–27 (–15)	–67 (–37)	–58 (–32)
Discharge Pressure, psi (kPa)	+45 (+310)	+43 (+296)	+54 (+372)	+51 (+351)
Cooling Capacity, %	+29	+33	same	+7
Energy Efficiency, %	+13	+15	–8	–3
<b>Performance vs. R-502</b>	<b>ISCEON® MO79</b>	<b>R-404A</b>	<b>ISCEON® MO79</b>	<b>R-404A</b>
Discharge Temperature, °F (°C)	–32 (–18)	–20 (–11)	–15 (–8)	–10 (6)
Discharge Pressure, psi (kPa)	+23 (+158)	+21 (+145)	+30 (+207)	+27 (+86)
Cooling Capacity, %	–1	+1	–6	+1
Energy Efficiency, %	–4	–2	–8	–3

+ is increase and – is decrease performance vs. R-22

R-22 assumes demand cooling with discharge temperature of 275°F (135°C)

### 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

<b>Component</b>	<b>Weight %</b>
HFC-134a	11.5
HFC-125	85.1
Isobutane	3.4

**For Further Information: (800) 235-7882**

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