

DuPont™ ISCEON® 9 Series

REFRIGERANTS

Product Information Bulletin

DuPont™ ISCEON® MO59

ISCEON® MO59 is an easy-to-use, non-ozone-depleting HFC retrofit refrigerant for R-22 in direct expansion stationary air conditioning (AC) and medium-temperature commercial refrigeration systems. ISCEON® MO59 is compatible with traditional and new lubricants, in most cases no change of lubricant type during retrofit is required.

ASHRAE #: R-417A

Applications

- Residential and commercial air conditioning
 - **Note:** for water chillers ISCEON® MO29 is recommended
- Medium temperature commercial refrigeration
 - Food service
 - Supermarket display cases
 - Food storage and processing

Benefits

- Provides easy, quick cost-effective retrofits
- 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)
- US EPA SNAP accepted for a broad range of AC and refrigeration applications
- UL classified
- Lower discharge pressure and temperature than R-22
 - Likely to prolong compressor life
- Low toxicity (similar to R-22)
- Has been in commercial use since 1997
- 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).

Broad field experience has shown that ISCEON® MO59 provides performance that meets customer requirements in most properly retrofitted systems. ISCEON® MO59 provides required cooling capacity in most systems; however, some systems may experience reduced capacity. ISCEON® MO59 has been shown to offer energy savings in some systems. Actual performance depends on system design and operating conditions.



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Discharge Pressure:	psia (kPa)
R-22	257 (1770)
ISCEON® MO59	236 (1630)

System Conditions:

Condensing Temperature = 110°F (43°C)

Evaporator Temperature = 40°F (4°C)

Discharge Temperature: °F (°C)

	At 40°F (4°C) evaporator temp.	At 0°F (-18°C) evaporator temp.
R-22	204°F (96°C)	*275°F (135°C)
ISCEON® MO59	161°F (72°C)	219°F (104°C)

* Assumes auxiliary cooling to limit compressor discharge temperature

System Conditions:

Condensing Temperature = 110°F (43°C)

Cooling Capacity vs. R-22

ISCEON® MO59	**5-20% lower
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** Experience indicates many air-to-air systems typically have 10-15% more capacity than required.

Retrofit Considerations

ISCEON® MO59 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 may be required in some applications. Refer to the ISCEON® MO59 Retrofit Guidelines for details.

Product Composition

Component	Weight %
HFC-134a	50
HFC-125	46.6
Butane	3.4

For Further Information: (800) 235-7882

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