

# DuPont Refrigerants

## U.S. GENERAL REPLACEMENT GUIDE

### R-22 REPLACEMENTS

<p><b>ISCEON® MO79</b> R-422A</p> <p><b>HFC</b> Retrofit New Equipment</p> <p><b>Lubricant</b> MO AB POE</p> <p><b>Evaporator Temp</b> Medium Low</p> <p><b>Applications</b> Refrigeration: Commercial Industrial</p>	<p><b>ISCEON® MO59</b> R-417A</p> <p><b>HFC</b> Retrofit</p> <p><b>Lubricant</b> MO AB POE</p> <p><b>Evaporator Temp</b> High Medium</p> <p><b>Applications</b> AC: Commercial Residential Refrigeration: Commercial</p>	<p><b>ISCEON® MO29</b></p> <p><b>HFC</b> Retrofit</p> <p><b>Lubricant</b> MO AB POE</p> <p><b>Evaporator Temp</b> High Medium</p> <p><b>Applications</b> AC: Water chillers Commercial Residential Refrigeration: Commercial</p>	<p><b>Suva® 410A</b> R-410A</p> <p><b>HFC</b> New Equipment Only Designed for R-410A</p> <p><b>Lubricant</b> POE</p> <p><b>Evaporator Temp</b> High</p> <p><b>Applications</b> AC: Commercial Heat Pumps Residential</p>	<p><b>Suva® 407C</b> R-407C</p> <p><b>HFC</b> New Equipment</p> <p><b>Lubricant</b> POE</p> <p><b>Evaporator Temp</b> High Medium</p> <p><b>Applications</b> AC: Commercial Lt Commercial Residential Refrigeration: Commercial</p>
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### R-12 REPLACEMENTS

<p><b>ISCEON® 39TC®</b> R-423A</p> <p><b>HFC</b> Retrofit</p> <p><b>Lubricant</b> POE single lubricant change</p> <p><b>Evaporator Temp</b> High Medium</p> <p><b>Applications</b> Centrifugal Chillers</p>	<p><b>Suva® 134a</b> R-134a</p> <p><b>HFC</b> New Equipment Retrofit</p> <p><b>Lubricant</b> POE PAG (auto ac)</p> <p><b>Evaporator Temp</b> High Medium (Above +20°F/-7°C)</p> <p><b>Applications</b> Commercial Refrigeration: Appliances Chillers Automotive AC</p>	<p><b>Suva® MP39</b> R-401A</p> <p><b>HCFC</b> Retrofit</p> <p><b>Lubricant</b> AB MO</p> <p><b>Evaporator Temp</b> Medium Low (Above -15°F/-26°C)</p> <p><b>Applications</b> Refrigeration: Supermarket systems (medium temp) Walk-in coolers</p>	<p><b>Suva® MP66</b> R-401B</p> <p><b>HCFC</b> Retrofit Also replaces R-500</p> <p><b>Lubricant</b> AB MO</p> <p><b>Evaporator Temp</b> Medium Low (Below -15°F/-26°C)</p> <p><b>Applications</b> Refrigeration: Freezers Transport</p>	<p><b>Suva® 409A</b> R-409A</p> <p><b>HCFC</b> Retrofit</p> <p><b>Lubricant</b> AB MO</p> <p><b>Evaporator Temp</b> Medium Low (Above -15°F/-26°C)</p> <p><b>Applications</b> Refrigeration: Supermarket systems (medium temp) Walk-in coolers</p>
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# SUGGESTED OIL GUIDE

ISCEON® Refrigerant	Recommended Lubricant	Alternate Lubricant
ISCEON® M029	MO	AB - POE
ISCEON® 39TC® (R-423A)	POE (single lubricant change)	
ISCEON® M059 (R-417A)	MO	AB - POE
ISCEON® M079 (R-422A)	MO	AB - POE

Suva® Refrigerant	Recommended Lubricant	Alternate Lubricant
Suva® 134a	POE/PAG (Auto AC)	
Suva® MP39 (R-401A)	AB	MO
Suva® 409A	AB	MO
Suva® MP66 (R-401B)	AB	MO
Suva® 95 (R-508B)	POE	
Suva® 404A	POE	
Suva® 507	POE	
Suva® HP80 (R-402A)	AB	MO
Suva® 408A	AB	MO
Suva® HP81 (R-402B)	AB	MO
Suva® 407C	POE	
Suva® 410A	POE	
Suva® 123	MO	AB

## ISCEON® 9 Series Refrigerants - Oil Change Guidelines

- ISCEON® 9 Series Refrigerants are 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.
- Field experience has shown that ISCEON® M079, M059 and M029 will work successfully with the existing mineral oil in most systems. In systems where oil return is a potential concern such as flooded evaporators or in systems where the suction line accumulator acts as a low pressure receiver, replacement of all, or part (~25%) of the compressor oil charge with an OEM approved polyol ester is recommended.
- ISCEON® 39TC® requires one lubricant change to POE during retrofit. ISCEON® 39TC® tolerates high residual levels of mineral oil; therefore no system flushing is required after changing the original lubricant to POE.

MO = Mineral Oil      AB = Alkylbenzene      POE = Polyol Ester

## Suva® Refrigerants - Oil Change Guidelines

- Where possible, use OEM-recommended oil type, charge size, and viscosity.
- When converting many CFC systems to an HCFC service refrigerant (Suva® MP39, 409A, MP66, HP80, 408A, or HP81), AB is the recommended lubricant for optimum oil return. One compressor oil change to AB will typically remove between 50 and 80% of the existing MO which satisfies the recommendations/requirements of most compressor manufacturers.
- When converting a CFC or HCFC system to an HFC refrigerant such as Suva® 134a or 95, POE is the recommended lubricant. At least 95% of the MO or AB should be replaced with POE of similar viscosity. This typically requires multiple oil changes.

## PERFORMANCE COMPARISON OF REPLACEMENT REFRIGERANTS

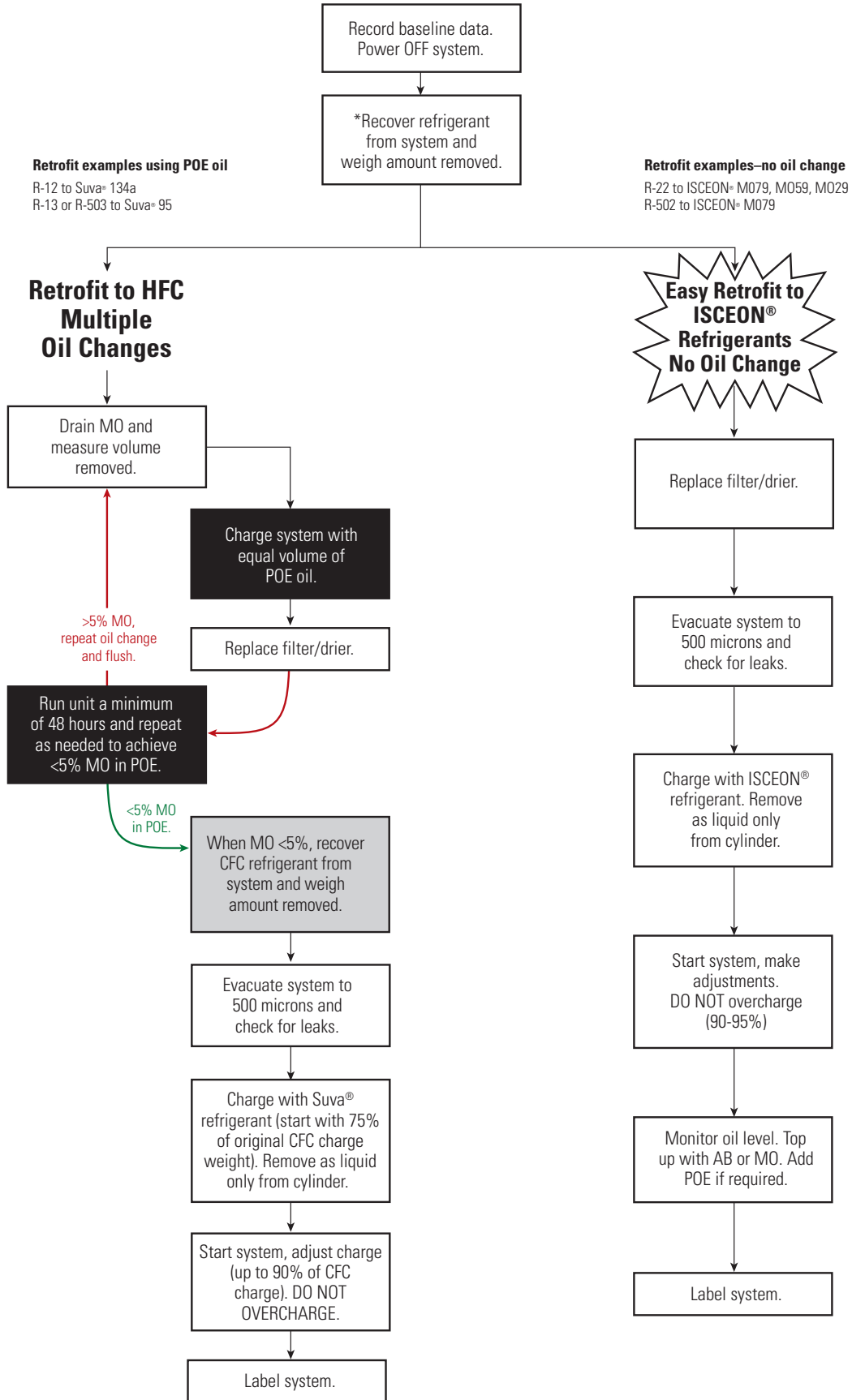
Refrigerant	Compared to	Discharge Pressure (psi)	Discharge Temperature (°F)	Refrigeration Capacity (%)
<b>R-22 HFC Replacements</b>				
ISCEON® M079	R-22	+50	-65	+5
ISCEON® M059	R-22	-21	-44	-15
ISCEON® M029	R-22	+12	-45	-7
<b>R-502 HFC Replacements</b>				
ISCEON® M079	R-502	+30	-25	Same
Suva® 404A	R-502	+20	-10	Same
Suva® 507	R-502	+30	-15	Same
<b>R-12 HFC Replacements</b>				
ISCEON® 39TC®	R-12	+30	-12	-5
Suva® 134a	R-12	+10	-10	-10
<b>R-13, R-23, R-503 PFC Replacements</b>				
Suva® 95	R-503	+2	-40	-2
<b>Service Refrigerants (HCFC)      NOTE: These products are subject to phase-out under the Montreal Protocol</b>				
Suva® MP39	R-12	+20	+25	+10
Suva® MP66	R-12	+30	+30	+15
Suva® 409A	R-12	+25	+30	+10

+ is increase - is decrease

The data in this table is based on equal compressor efficiency for all refrigerants, and assumes auxiliary cooling to limit R-22 compressor discharge temperature in some cases. This information is intended to serve as a guide; actual performance will vary depending on system design and operating conditions.

# GENERAL RETROFIT GUIDE

For detailed information, please see our retrofit guidelines.



\* For retrofit to HFC multiple oil changes, DO NOT remove CFC refrigerants until AFTER oil flushing is complete.

# DuPont Refrigerants

## U.S. GENERAL REPLACEMENT GUIDE

### R-502 REPLACEMENTS

<p><b>ISCEON® MO79</b> R-422A</p> <p><b>HFC</b> Retrofit New Equipment</p> <p><b>Lubricant</b> MO AB POE</p> <p><b>Evaporator Temp</b> Medium Low</p> <p><b>Applications</b> Refrigeration: Commercial Industrial</p>	<p><b>Suva® 404A</b> R-404A</p> <p><b>HFC</b> New Equipment</p> <p><b>Lubricant</b> POE</p> <p><b>Evaporator Temp</b> Medium Low</p> <p><b>Applications</b> Refrigeration: Commercial Industrial</p>	<p><b>Suva® 408A</b> R-408A</p> <p><b>HCFC</b> Service Refrigerant</p> <p><b>Lubricant</b> AB MO</p> <p><b>Evaporator Temp</b> Medium Low</p> <p><b>Applications</b> Refrigeration: Commercial</p>	<p><b>Suva® 507</b> R-507</p> <p><b>HFC</b> New Equipment</p> <p><b>Lubricant</b> POE</p> <p><b>Evaporator Temp</b> Medium Low</p> <p><b>Applications</b> Refrigeration: Commercial Industrial</p>	<p><b>Suva® HP80</b> R-402A</p> <p><b>HCFC</b> Service Refrigerant</p> <p><b>Lubricant</b> AB MO</p> <p><b>Evaporator Temp</b> Medium Low</p> <p><b>Applications</b> Refrigeration: Commercial</p>
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### R-11 REPLACEMENTS

<p><b>Suva® 123</b> R-123</p> <p><b>HCFC</b> New Equipment Retrofit</p> <p><b>Lubricant</b> MO</p> <p><b>Evaporator Temp</b> High Medium</p> <p><b>Applications</b> Centrifugal Chillers</p>
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### R-13, R-23, R-503 REPLACEMENTS

<p><b>Suva® 95</b> R-508B</p> <p><b>PFC</b> New Equipment Retrofit</p> <p><b>Lubricant</b> POE</p> <p><b>Evaporator Temp</b> Very Low Temp (VLT) Below -40°F</p> <p><b>Applications</b> Refrigeration: Cascade Systems</p>
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