



Refrigeration oil

Sunice® Hybrid series

The "SUNICE HYBRID" series was developed as the next generation of refrigeration oil based on the 100 years of experience and technological expertise in refrigeration oil cultivated by "SUNISO". It is characterized by its high versatility, as it can be applied to many refrigerants without having to use different refrigerant oils for each refrigerant. In recent years, the shift to lower GWP refrigerants has been accelerating, and this high versatility makes it unique.

APPLICATIONS

For refrigeration compressors using HFC/HFO as a refrigerant.

- Sunice® HYBRID can be used in virtually any installation, regardless of compressor or evaporation temperature with HFC, HFO, CO2 refrigerants.
- Performs excellently with R32, R410A, R407C, R407H, R404A, R454B, R449A, R1234yf, R134a and others.
- Applicable to compressors installed in Air Conditioners, Car Air Conditioners, Freezers, Showcases, Refrigerated vehicles and others.

ADVANTAGES

Provide outstanding lubricity, stability and corrosion protection.

- Excellent versatility and can be used with many refrigerants (HFC and HFO refrigerants). It contributes to improved operational efficiency by streamlining inventory management and reducing errors in oil type selection.
- Mixture of highly stable "mineral base oil" and "synthetic base oil" provides excellent chemical stability against moisture and air contamination.
- Excellent lubricating performance allows the product to be used in a wide range of compressor types, including rotary, reciprocating, screw, and scroll types, as it can exhibit excellent wear resistance.

Typical Properties

Analysis	Unit	32S	68S
ISO Viscosity Grade		32	68
Density at 15°C	g/cm ³	0.956	0.960
Viscosity (40 °C)	mm ² /s	32.3	66.6
Viscosity (100 °C)	mm ² /s	5.1	8.2
Pour point	°C	-35.0	-40.0
Flash point (COC)	°C	230	254

Above characteristics are mean values given as an information.

Lowest Evap.Temp. Range

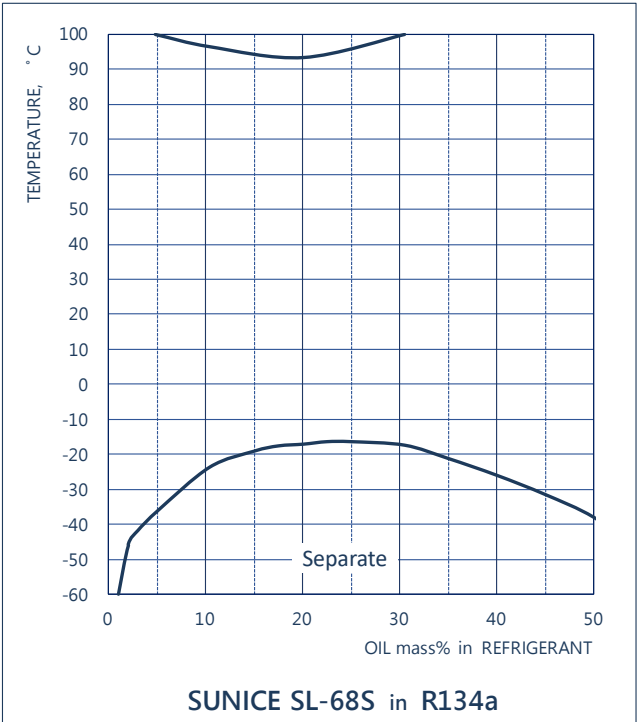
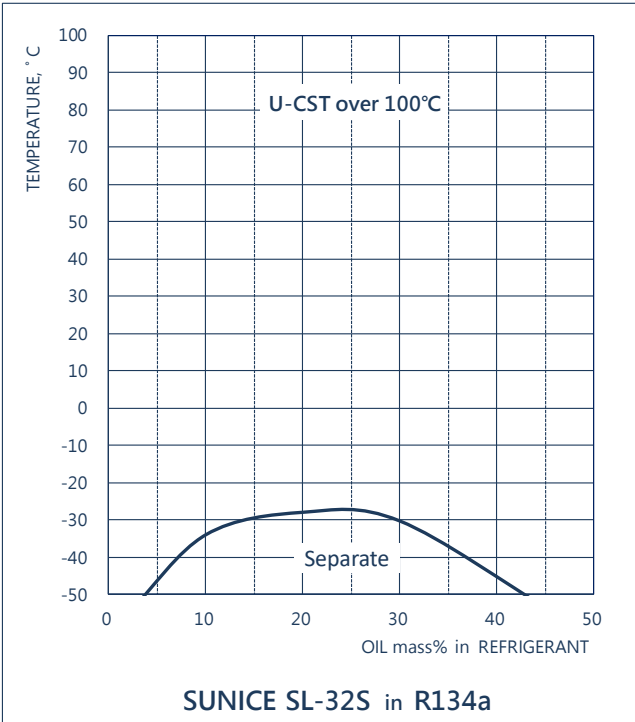
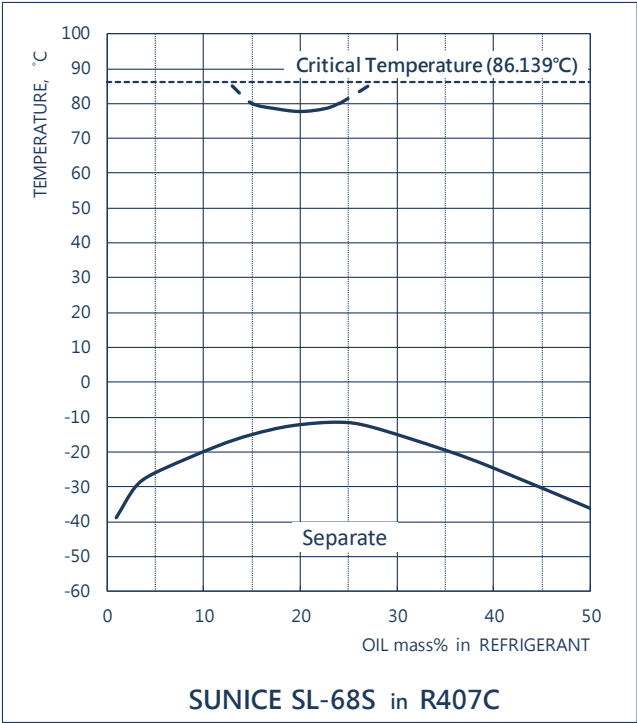
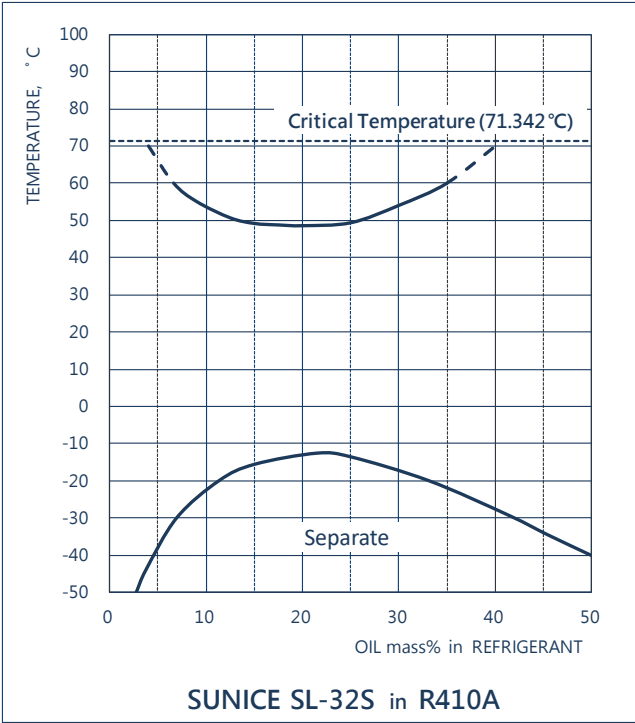
ASHRAE	32S	68S
R-134a	- 40°C	- 30°C
R-404A	- 60°C	- 60°C
R-407C	- 40°C	- 20°C
R-410A	- 30°C	- 10°C
R-507A	- 60°C	- 60°C

For equipment under warranty, please refer to equipment builder recommendations.





Critical Solution Temperature



Sunice® is a registered trademark of Japan Sun Oil Company, Ltd.





Application table

ASHRAE	Evap-Temp From	Piston		Screw	Centrifugal
R744 - sub	-50 °C	32S	68S		
R744 - trans	-50 °C		68S		
R404A	-50 °C	32S	68S	68S	
R407C	-30 °C		68S		
R410A	-25 °C	32S		68S	
R410A	-45 °C	32S			
R417A	-15 °C		68S		
R448A	-50 °C	32S	68S	68S	
R449A	-50 °C	32S	68S	68S	
R452A	-40 °C	32S	68S	68S	
R454A	-40 °C	32S	68S	68S	
R507A	-60 °C	32S		68S	
R134a	-20 °C	32S	68S		68S
R134a	-40 °C	32S		68S	68S
R245fa	-20 °C			68S	68S
R1234yf	-20 °C	32S	68S	68S	68S
R1234ze(E)	-20 °C	32S	68S	68S	68S
R1233zd(E)	-20 °C			68S	68S

For equipment under warranty, please refer to equipment builder recommendations.

In changing the technology or brand of refrigeration oil, flushing the system is recommended to minimize contamination with the old technology or brand.

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