

# PETRONAS FRIGOR S SERIES

## Premium Synthetic POE refrigeration fluids

PETRONAS FRIGOR S Series fluids are premium performance fully synthetic refrigeration oils, especially developed for use in refrigeration and air conditioning systems charged with ozone friendly alternative refrigerants with chlorine-free.

Formulated with Polyol-Esters (POE) enhanced with outstanding lubricity, stability and corrosion protection additives, PETRONAS FRIGOR S fluids improve system efficiency and reduce operational risks by providing outstanding miscibility with refrigerants and maintaining their viscosity at optimum level.

### Applications

PETRONAS FRIGOR S Series fluids are recommended for use in:

- Refrigeration, air conditioning and heat pump systems charged with ozone friendly, chlorine-free refrigerants
- Hermetic, semi-hermetic and open piston compressors
- Reciprocating, screw, centrifugal, and scroll compressors

Note: PETRONAS FRIGOR S Series are miscible and compatible with HFC/FC refrigerants such as R134a, R404A, R507, R410A, R407C and HFO refrigerants.

### Features and Benefits

Features	Benefits
Excellent miscibility with refrigerants	Allows for optimum oil return from evaporator to compressor, minimizing oil buildup effect in the evaporator and other system components.
Excellent viscosity retention	Providing outstanding lubricity without excessive oil thinning, due to the dilution of the lubricant by the refrigerant, for maximum equipment protection at a wide temperature range.
High thermal stability	To withstand wide temperature variations, providing for reduced maintenance and long oil service life.
Proven technology	Widely used by leading compressor manufacturers for refrigeration systems, guaranteeing excellent performance in all applications for which PETRONAS FRIGOR S is suitable.

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### Typical Properties

Characteristic	Method	S 22	S 32	S 46	S 68
Density @ 20°C, kg/L	ASTM D 4052	0,994	0,980	0,978	0,977
Viscosity @ 40°C, cSt	ASTM D 445	19,3	32,5	46,8	68,3
Viscosity @ 100°C, cSt	ASTM D 445	4,2	5,8	7,3	9,5
Viscosity Index	ASTM D 2270	124	121	118	122
TAN, mg KOH/g	ASTM D 664	0,02	0,02	0,02	0,02
Flash Point, °C / °F	ASTM D 92	260 / 500	264 / 507	260 / 500	270 / 518
Pour Point, °C / °F	ASTM D 97	-57 / -71	-55 / -67	-48 / -54	-39 / -38
Water content, ppm	ASTM D 6304	<100	<100	<100	<100
Miscibility (Low °C) 10% Lube in R134a	In House	-43	-43	-34	-26
Miscibility (High °C) 10% Lube in R134a	In House	>80	>80	>80	>80

  

Characteristic	Method	S 100	S 170	S 220
Density @ 20°C, kg/L	ASTM D 4052	0,969	0,968	0,975
Viscosity @ 40°C, cSt	ASTM D 445	98,5	170,0	219,0
Viscosity @ 100°C, cSt	ASTM D 445	11,4	17,0	19,2
Viscosity Index	ASTM D 2270	103	107	100
TAN, mg KOH/g	ASTM D 664	0,02	0,02	0,02
Flash Point, °C / °F	ASTM D 92	265 / 509	290 / 554	287 / 549
Pour Point, °C / °F	ASTM D 97	-31 / -24	-25 / -13	-25 / -13
Water content, ppm	ASTM D 6304	<100	<100	<100
Miscibility (Low °C) 10% Lube in R134a	In House	-28	Immiscible at RT*	-18
Miscibility (High °C) 10% Lube in R134a	In House	>80	Immiscible	>80

All technical data are provided for reference only. SS is available upon request, including quality control limits.

\* RT: Room Temperature

### Performance Levels

- DIN 51503 KD
- ISO 6743-3 ISO-L-DRD

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### Health, Safety and Environment

This product is unlikely to present any significant health and safety hazards when used in the recommended application. Avoid contact with skin. Wash immediately with soap and water after skin contact. Do not discharge into drains, soil or water.

For further detail regarding storage, safe handling, and disposal of product, please refer to product SDS or contact us at: [www.pli-petronas.com](http://www.pli-petronas.com).

### Important Note

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Safety Data Sheets are available for all our products and should only be consulted for appropriate information regarding storage, safe handling and disposal of the product. No responsibility shall be taken by either PLISB or its subsidiaries and related holding corporation for any loss or injury or any direct, indirect, special, exemplary, consequential damages or any damages whatsoever, whether in action of contract, negligence or other tortuous action, in connection with or resulting from abnormal use of the materials and/or information, from any failure to adhere to recommendations, or from hazards inherent in the nature of the materials and/or information. All products, services and information supplied are under our standard conditions of sale. Please consult with any of our local representatives in the event you require any further information.