

PETRONAS FRIGOR S SERIES

Fully synthetic POE refrigeration fluids

PETRONAS FRIGOR S Series fluids are high-performance, fully synthetic refrigeration oils based on polyol-esters (POE), especially developed for use with chlorine-free, fluorinated hydrocarbons.

They are miscible and compatible with HFC/FC refrigerants such as R134a, R404A, R507, R410A, R407C and HFO refrigerants.

PETRONAS FRIGOR S Series 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

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	Specification	S 22	S 32	S 46	S 68
Density @ 20°C, kg/L	ASTM D 4052	(1)	0,994	0,980	0,978	0,977
Viscosity @ 40°C, cSt	ASTM D 445	±10%	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	(1)	124	121	118	122
TAN, mg KOH/g	ASTM D 664	(1)	0,02	0,02	0,02	0,02
Flash Point, °C / °F	ASTM D 92	Report	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	(1)	<100	<100	<100	<100
Characteristic	Method	Specification	S 100	S 170	S 220	
Density @ 20°C, kg/L	ASTM D 4052	(1)	0,969	0,968	0,975	
Viscosity @ 40°C, cSt	ASTM D 445	±10%	98,5	170,0	219,0	
Viscosity @ 100°C, cSt	ASTM D 445	**	11,4	17,0	19,2	
Viscosity Index	ASTM D 2270	(1)	103	107	100	
TAN, mg KOH/g	ASTM D 664	(1)	0,02	0,02	0,02	
Flash Point, °C / °F	ASTM D 92	Report	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	(1)	<100	<100	<100	

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

**Individual limits accordingly with each viscosity grade / (1): not required in specification

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

Important Note

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