

PETRONAS HTO SERIES

High Performance Heat Transfer Fluids

PETRONAS HTO Series are high performance heat transfer fluids specially developed for open and enclosed heat transfer systems operating at high bulk oil temperatures. Formulated with high quality selected mineral base oils enhanced with advanced anti-oxidant and detergent additives, PETRONAS HTO fluids provide high anti-oxidant protection and detergency to eliminate build-up and deposits.

Applications

PETRONAS HTO Series fluids are recommended for use in:

- open and enclosed circulated heat transfer systems
- petroleum product processing
- rubber, textile and plastics industries
- solar energy heat transfer and storage

Features and Benefits

Features	Benefits
Excellent heat transfer rates	Maintains excellent thermal conductivity which improves system efficiency
High thermal and oxidation stability	Provides high oxidation stability at elevated temperatures and avoid thermal cracking up 255°C, 305°C, and 315°C according ISO VG 22, 32, and 46 respectively*. Minimizes sludge and acid formation
High compatibility with most seal and elastomers	Compatible with most seals and elastomers, which prevents oil leaks and contamination due to seal erosion

*Considering closed system



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Technical Data Sheet
Revision Date: 28.09.2022

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Typical Properties

Characteristic	Method	Specification	22	32	46
Specific Gravity @15°C	ASTM D 4052	(1)	0,868	0,871	0,877
Kinematic Viscosity at 40°C, cSt	ASTM D 445	(1)	22	32	46
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	4,3	5,4	6,8
Viscosity Index	ASTM D 2270	(1)	101	102	102
Flash Point, °C	ASTM D 92	(1)	190	220	230
Pour Point, °C	ASTM D 97	(1)	-18	-15	-12
TAN, mgKOH/g	ASTM D 664	(1)	0,10	0,10	0,10
Copper Strip Corrosion	ASTM D 130	(1)	1b	1b	1b
Oil load temperature ranges: closed system			-7°C to 255°C	-4°C to 305°C	-2°C to 315°C
Oil load temperature ranges: open system			-7°C to 130°C	-4°C to 180°C	-2°C to 190°C
Thermal Conductivity, W/MK					
44°C			0,178	0,182	0,193
74°C			0,171	0,176	0,180
103°C			0,165	0,170	0,173
123°C			0,155	0,160	0,165
Specific Heat, J/g°C					
30°C			2,0340	2,0405	1,9651
40°C			2,0735	2,0776	2,0042
50°C			2,1138	2,1143	2,0423
60°C			2,1555	2,1524	2,0779
70°C			2,1973	2,1905	2,1174
80°C			2,2428	2,2303	2,1568
90°C			2,2957	2,2778	2,2053
100°C			2,3331	2,3115	2,2391
110°C			2,5421	2,3490	2,2765
120°C			2,3755	2,3867	2,3153
130°C			2,4192	2,4298	2,3553
140°C			2,4647	2,4653	2,3923
150°C			2,5053	2,5009	2,4297
Coefficient of Thermal Expansion, g/cm ³ /°C			0,00068	0,00063	0,00063

All technical data are provided for reference only / SS is available upon request including quality control limits / (1): not required in specification

www.pu-petronas.com

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Performance Levels

- DIN 51522
- ISO 6743-12 Family Q

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.

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