



Technical Data Sheet

Revision Date: 19.05.2020 Rev. 03

PETRONAS HYDRAULIC HFC

High Performance Water-glycol Fire Resistant Hydraulic Fluid

PETRONAS Hydraulic HFC is a high performance, fire resistant, anti-wear hydraulic fluids specially developed for industrial hydraulic equipment operating under normal to moderate conditions, recommended whenever a major fire hazard exists associated with industrial hydraulic systems. Formulated with balanced water-glycol base enhanced with advanced anti-wear, anti-oxidant, anti-rust and anti-foam additives, PETRONAS Hydraulic HFC fluid provides very good anti-wear protection, smooth operation of the hydraulic systems and contribute to mitigate the risks of violent explosions or fire in the immediate vicinity of flames or hot metal surfaces.

Applications

PETRONAS Hydraulic HFC is recommended for use in:

- various industrial hydraulic systems operating under high temperatures whenever a major fire hazard exists such as die casting machines, hydraulic forging presses and hammers, machines and drive systems in the mining industry and robot welding machines

Note: PETRONAS Hydraulic HFC can only be mixed with water-glycol based hydraulic fluids. Historically, water-glycol fluids have exhibited excellent compatibility and service life with standard hydraulic seals and hose elastomers. PETRONAS Hydraulic HFC affords similar elastomer compatibility with commonly used materials, such as Viton, high-nitrile Buna N, EPDM, butyl, silicone, and halogenated elastomers (e.g., Aflas, Kalrez, etc.). Urethanes and Buna S (SBR) elastomers are not compatible with PETRONAS Hydraulic HFC.

Features and Benefits

Features	Benefits
Excellent Fire resistance / High temperature applications	Reduces risk of fire in high temperature and close to open flame applications, which can ensure safer working environment
Very good anti-wear protection	Protects equipment components from excessive wear
Very good thermal and oxidation stability	Maintains performance levels under wide temperatures and pressure
Very good rust & corrosion protection	Inhibits the corrosion process that occurs in presence of water, improving equipment life
High multi metal compatibility	Compatible with most metal alloys ensuring trouble free performance of the system



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Typical Properties

Characteristic	Method	46
Specific Gravity @20°C	ASTM D 4052	1,089
Kinematic Viscosity at 40 °C, cSt	ASTM D 445	46
Viscosity Index	ASTM D 2270	192
Pressure -Viscosity Coefficient at 65°C, GPa-1	-	2,97
pH, 25°C	ASTM D 1287	8,8 - 9,4
Reserve Alkalinity (ml 0.1N HCl/100 ml sample)	-	160 - 200
Appearance	ASTM E 284	Red liquid-Slight (Haze Permissible)
Foam Sequence I, mL	ASTM D 892	50/0
Pour Point, °C	ASTM D 97	-63
Water content, %	ASTM E 203	34 - 38
Manifold Ignition test, °C	ISO 20823	700
Flash Point, °C	ASTM D 92	Not Applicable (Product with water in formulation)
Thermal Conductivity at 100°F (est.) (BTU/ft/hr/°F)	-	0,26
Coefficient of Thermal Expansion per °C (est.)		
at 20°C	-	0,00065
at 55°C	-	0,00067
Specific Heat (BTU/lb/°F) at 68°F (est.)	-	0,74
Vapor Pressure at 100°F, psia	-	1,1
Corrosion Resistance Properties		
Liquid Solution (copper, iron, steel, brass)		Excellent
Vapor Phase (steel, cast iron)	-	Excellent
NOTE: Not recommended for use with zinc, galvanized iron, or cadmium.		
Vickers Vane Pump (Type 104 C 100hr 2000 psi), mg	ASTM D 2882	10

SS is available upon request including quality control limits

Performance Levels

- Factory Mutual Approved (PR457011)
- HFC Fluid

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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

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