Technical Data Sheet
Revision Date: 12.01.2023

PETRONAS HYDRAULIC HV SERIES

High Viscosity Index Anti-Wear Hydraulic Fluids

PETRONAS Hydraulic HV Series are high performance anti-wear hydraulic fluids specially developed for a wide range of mobile and industrial hydraulic equipment operating under normal to heavy duty conditions, subjected to high variations in operating and/or ambient temperatures, including cold start-ups.
Formulated with high quality selected base oils enhanced with high shear stable VI improver and advanced anti-wear, antioxidant, anti-rust and anti-foam additives, PETRONAS Hydraulic HV fluids provide high anti-wear protection, more stable performance across wide temperature range as compared to normal viscosity index products and up to 3x longer lasting performance*.

PETRONAS Hydraulic HV Series meet or exceed key industrial specifications and OEM requirements.

*vs. minimum requirements of ISO 11158 HV for anti-wear hydraulic fluids based on TOST (ASTM D943)

Applications

PETRONAS Hydraulic HV Series are recommended for use in:

- various mobile and industrial hydraulic systems operating under normal to heavy duty conditions that demand good control of fluid viscosity during operating cycle
- hydraulic systems subjected to high and/or rapid variations in operating and/or ambient temperatures
- outdoor hydraulic systems operating in cold climates, where high protection is required in subzero temperatures and cold start-ups are frequently encountered
- hydraulic systems where high precision and stable efficiency of the system is required (e.g., moulding machines)

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Features and Benefits

Features	Benefits
High Viscosity Index	Ensures superior performance and protection over a wide temperature range
Low temperature protection	Ensures proper protection of equipment components during cold starts
High anti-wear protection	Protects equipment components from excessive wear and provides long equipment life
High wet and dry filterability	Maintains high filter efficiency without giving rise to undue pressure drop, thus increasing filter lifetime
High thermal and oxidation stability	Maintains performance levels under high temperatures and pressure, enabling long oil drain intervals
High rust & corrosion protection	Inhibits the corrosion process that occurs in presence of water, improving equipment life
High water separability	Due to good water separability the system is protected from water degenerative effects, maintaining hydraulic system efficiency at required level and reducing maintenance costs
High air release and foam stability	Maintains high efficiency in hydraulic systems, ensures smooth operation due to fast air release. Protects the system from air degenerative effects reducing maintenance costs
High multi metal compatibility	Compatible with most metal alloys ensuring trouble free performance of the system
High compatibility with most seal and elastomers	Compatible with most seals and elastomers, which prevents oil leaks and contamination due to seal erosion

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Typical Properties

Characteristic	Method	Specification	22	32	46
Specific Gravity @15°C	ASTM D 4052	(1)	0,850	0,873	0,877
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	22	32	46
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	4,87	6,2	7,9
Viscosity Index	ASTM D 2270	Min. 140	151	146	143
Flash Point, °C	ASTM D 92	**	194	220	220
Pour Point, °C	ASTM D 97	**	-54	-33	-33
TAN, mgKOH/g	ASTM D 664	(1)	0,60	0,60	0,60
FZG, Stages Passed	ISO 14635-1	Min. 10	12	12	12
Water Separability, 40/37/3 - mins	ASTM D 1401	**	5	15	15
Copper Strip Corrosion	ASTM D 130	Max. 2	1b	1b	1b
TOST life, hours	ASTM D 943	Min. 1000	3900	3900	3900
Foam Sequence I, mL	ASTM D 892	Max. 150/0	0/0	0/0	0/0
Foam Sequence II, mL		Max. 75/0	0/0	0/0	0/0
Foam Sequence III, mL		Max. 150/0	0/0	0/0	0/0
Characteristic	**Method**	**Specification**	**68**	**100**	**150**
Specific Gravity @15°C	ASTM D 4052	(1)	0,880	0,877	0,884
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	68	100	150
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	10,5	14,2	18,7
Viscosity Index	ASTM D 2270	Min. 140	142	145	141
Flash Point, °C	ASTM D 92	**	230	240	240
Pour Point, °C	ASTM D 97	**	-30	-27	-27
TAN, mgKOH/g	ASTM D 664	(1)	0,60	0,60	0,60
FZG, Stages Passed	ISO 14635-1	Min. 10	12	12	12
Water Separability, 40/37/3 - mins	ASTM D 1401	**	15	20	20
Copper Strip Corrosion	ASTM D 130	Max. 2	1b	1b	1b
TOST life, hours	ASTM D 943	Min. 1000	3900	3900	3900
Foam Sequence I, mL	ASTM D 892	Max. 150/0	0/0	0/0	0/0
Foam Sequence II, mL		Max. 75/0	0/0	0/0	0/0
Foam Sequence III, mL		Max. 150/0	0/0	0/0	0/0

All technical data are provided for reference only and all specification based on DIN 51524-3 (2006) and ISO 11158 HV (FDIS 2008)
**Individual limits accordingly with each viscosity grade / (1): not required in specification / SS is available upon request including quality control limits

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Performance Levels

- ASTM D 6158 HV
- Bosch Rexroth RD90220
- DIN 51524 Part II HLP and III HVLP (2006)
- Eaton 03-401-2010
- Fives Cincinnati P-68/P-69/P-70
- GM LS-2 (2004)
- ISO 11158 HV (FDIS 2008)
- Parker Denison HF-0, HF-1, HF-2
- SAE MS1004
- SEB 181 222 (2007)
- US Steel 126, 127 and 136

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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