

# PETRONAS HYDRAULIC SYN BIO SERIES

## Supreme Performance Biodegradable Hydraulic Fluids

PETRONAS Hydraulic SYN BIO Series are supreme performance biodegradable anti-wear hydraulic fluids specially developed for mobile equipment operating in extreme cold or hot weather conditions as well in environmentally sensitive areas.

Formulated with high viscosity index synthetic biodegradable base oils enhanced with advanced anti-wear, anti-oxidant, anti-rust and anti-foam additives, PETRONAS Hydraulic SYN BIO fluids provide biodegradability characteristics, excellent oxidation and thermal properties and anti-wear protection across wider temperature range.

PETRONAS Hydraulic SYN BIO Series meet or exceeds key industrial specifications and OEM requirements including the new marketing leading EU-Ecolabel having a renewable content >80% and biodegradability of >60% against OECD 301B.

### Applications

PETRONAS Hydraulic SYN BIO Series are recommended for use in:

- mobile equipment operating in extreme cold or hot weather conditions as well as in environmental sensitive areas
- construction, dredging, forestry, marine, mining, offshore, wind turbines and tunnel boring are some others industries utilizing biodegradable hydraulic fluid
- hydraulic systems subjected to rapid variations in operating and ambient temperatures
- outdoor hydraulic systems operating in cold climates, where high protection is required in subzero temperatures and cold start-ups are frequently encountered

### Features and Benefits

Features	Benefits
Biodegradability	Use in hydraulic systems where biodegradable fluids are preferred for environmental reasons. Renewable content >80% and biodegradability of >60% against OECD 301B
High Viscosity Index	Ensures supreme performance and protection over a wide temperature range
Low temperature protection	Ensures proper protection of equipment components in low temperature operating conditions
High anti-wear protection	Protects equipment components from excessive wear and provides longer equipment life
Excellent thermal and oxidation stability	Maintains performance levels under high temperatures and pressure, enabling long oil drain intervals

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Features	Benefits
Very good rust & corrosion protection	Inhibits the corrosion process that occurs in presence of water, improving equipment life
Excellent air release and foam stability	Maintains excellent efficiency in hydraulic systems, ensures smooth operation due to fast air release. Protects the system from air degenerative effects reducing maintenance costs
Very good multi metal compatibility	Compatible with most metal alloys ensuring trouble free performance of the system
Very good compatibility with most seal and elastomers	Compatible with most seals and elastomers, which prevents oil leaks and contamination due to seal erosion

### Typical Properties

Characteristic	Method	Specification	32	46	68
Specific Gravity @15°C	ASTM D 4052	Report	0,936	0,930	0,923
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	32	46	68
Kinematic Viscosity at 100°C, cSt	ASTM D 445	Min. 6,1	6,30	8,07	10,60
Viscosity Index	ASTM D 2270	(1)	152	149	144
Flash Point, °C	ASTM D 92	Min. 185	282	298	297
Pour Point, °C	ASTM D 97	Max. -15	-39	-42	-42
TAN, mgKOH/g	ASTM D 664	Report	0,12	0,10	0,09
FZG A/8.3/90, Fail Load	ISO 14635-1	Min. 10	10	11	11
Water Separability, 40/37/3 - minutes	ASTM D 1401	Report	15	10	25
Copper Strip Corrosion	ASTM D 130	Max. 2	1b	1b	1b
Foam Sequence I, mL	ASTM D 892	Max. 150/0	0/0	10/0	0/0
Foam Sequence II, mL		Max. 75/0	0/0	0/0	20/0
Foam Sequence III, mL		Max. 150/0	0/0	0/0	0/0
Biodegradability, %	ISO 14593 ISO 9439 OECD 301 B,C,D,E,F	Min. 60	80	62	62
Renewable Content, %	ASTM D 6866	Min. 80	Pass	Pass	Pass

All technical data are provided for reference only and all specification based on ISO 15380 HEES

\*\*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

- Blue Angel
- Eaton Brochure 03-401-2010
- EU Ecolabel (UK/027/023)
- ISO 15380 HEES
- JCMAS P042 (HKB)
- Parker HF-1 / HF-2 / HF-6
- Swedish Standard SS 15 54 34 Category AAV (2015)
- USDA Biobased
- VDMA 24568 & 24570
- Vessel General Permit (VGP)

### 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).

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