

PETRONAS GEAR SYN PAG SERIES

Supreme Performance Synthetic (PAG) Industrial Gear Oil

PETRONAS Gear Syn PAG Series are supreme performance industrial gear oils specially developed for various types of enclosed industrial gears operating under normal to extremely heavy duty conditions.

Formulated with high viscosity index water soluble polyalkylene glycol synthetic base oil (PAG) enhanced with advanced extreme pressure, anti-oxidant, anti-rust and anti-foam additives, PETRONAS Gear Syn PAG oils provide excellent extreme pressure, anti-wear and micropitting protection, superior performance across wide temperature range, energy saving, reduced bulk oil temperatures, smooth operation of the gear drives and up to 5x longer lasting performance vs conventional mineral gear oils.

PETRONAS Gear Syn PAG Series meets or exceeds key industrial specifications and OEM requirements.

Applications

PETRONAS Gear Syn PAG Series are recommended for use in:

- various types of enclosed industrial gears (spur/helical/bevel/planetary and worm) with circulation or splash lubrication systems operating at bulk oil temperature up to 200°C
- gear drives subjected to high variations in operating and/or ambient temperatures, including cold start-ups
- gears drives demanding high protection against micropitting
- gears drives subjected to extremely heavy loads
- gear drives sensitive to sludge formation
- non-gear applications include shaft couplings, ball roller and other types of anti-friction bearings

Note: Polyurethane based elastomers, leather, cork, asbestos, paper and board should be avoided. Common seal and gasket materials are unaffected by PETRONAS Gear Syn PAG. Nitrile Rubber (NBR), Fluoro-Silicone or Vinyl-Methyl Polysiloxane are recommended especially where high temperatures are involved.

PETRONAS Gear Syn PAG oils must never be mixed with mineral oil or PAO based products

Features and Benefits

Features	Benefits
Excellent micropitting resistance	Helps to extend gear and bearing life in gear drives operating under severely loaded conditions
Low temperature protection	Ensures proper protection of equipment components during cold starts
High viscosity index	Ensures superior performance and protection over a wide temperature range
Excellent extreme pressure protection	Excellent extreme pressure performance giving long gear life in severely loaded gear drives

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Features	Benefits
Excellent 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
Excellent resistance to sludging	Excellent cleanliness for sludge free gear drives
Very good rust & corrosion protection	Inhibits the corrosion process that occurs in presence of water, improving equipment life
Very good multi metal compatibility	Compatible with most metal alloys ensuring trouble free performance of the system

Typical Properties

Characteristic	Method	Specification	150	220	320
Specific Gravity @15°C	ASTM D 4052	Report	1,054	1,058	1,062
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	150	220	320
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	28,5	39,8	56,5
Viscosity Index, min	ASTM D 2270	Min. 90	230	235	245
Flash Point, °C	ASTM D 92	Min. 200	>290	>290	>290
Pour Point, max °C	ASTM D 97	**	-42	-42	-39
FZG, Failure stage ***	ISO 14635-1	Min. 12	>12	>12	>12
FZG A/8,3/90 FE8 bearing; roller wear, mg Micropitting behavior, class	DIN 51819-3 FVA Nr. 54 I-IV	<30 -	Pass High	Pass High	Pass High
Characteristic	Method	Specification	460	680	
Specific Gravity @15°C	ASTM D 4052	Report	1,065	1,070	
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	460	680	
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	78,0	111,0	
Viscosity Index, min	ASTM D 2270	Min. 90	252	263	
Flash Point, °C	ASTM D 92	Min. 200	>290	>290	
Pour Point, max °C	ASTM D 97	**	-36	-36	
FZG, Failure stage ***	ISO 14635-1	Min. 12	>12	>12	
FZG A/8,3/90 FE8 bearing; roller wear, mg Micropitting behavior, class	DIN 51819-3 FVA Nr. 54 I-IV	<30 -	Pass High	Pass High	

All technical data is provided for reference only and all specification based on DIN 51517-3 and ISO 12925-1

**Individual limits accordingly with each viscosity grade / (1): not required in specification / SS is available upon request including quality control limits

*** PETRONAS GEAR SYN PAG Series passed stage 14 when FZG was run, however according to ISO 14635-1 tests results higher than 12 should be reported as >12.

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Performance Levels

- DIN 51517 Part III
- Flender BA T 7300 A-b (Revision 16)
- ISO 12925 CKPG, CSPG, CTPG

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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