

PETRONAS GEAR SYN SERIES

Premium Performance Synthetic Industrial Gear Oil

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

Formulated with high viscosity index synthetic base oil enhanced with advanced extreme pressure, anti-oxidant, anti-rust and anti-foam additives, PETRONAS Gear Syn oils provide clean-gear performance, excellent extreme pressure and Micro-pitting protection, anti-wear, superior performance across wide temperature range, and provides energy saving opportunities with reduced bulk oil temperatures, smooth operation of the gear drives and up to 2x longer lasting performance*.

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

*vs. minimum requirements of industrial gear oils to pass the viscosity increase test (ISO 4263-4 @95°C)

Applications

PETRONAS Gear Syn Series are recommended for use in:

- wind turbine gear drives
- mining – gear drives requiring additional protection such as conveyer belts, shaft winder gear drives, mills, crushers, separators and other processing units
- steel and cement heavy duty industrial gear drives
- power generation gear drives such as mills and heavily loaded gear drives

PETRONAS Gear Syn is compatible 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 in areas operating at low temperatures
High viscosity index	Ensures supreme 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
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

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Features	Benefits
Very good rust & corrosion protection	Inhibits the corrosion process that occurs in presence of water, improving equipment life
Very good seal & paint compatibility	Compatible with most seals & paints in modern gear drives, which ensures gear drive cleanliness
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	460	680
Specific Gravity @15°C	ASTM D 4052	Report	0,880	0,882	0,891	0,900	0,907
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	150	220	320	460	680
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	20,5	27,5	37,2	48,3	64,7
Viscosity Index, min	ASTM D 2270	**	159	161	165	165	167
Flash Point, °C	ASTM D 92	Min. 200	218	218	218	218	218
Pour Point, max °C	ASTM D 97	**	-39	-39	-39	-36	-33
Water Separability, 42/38/0 - mins	ASTM D 1401	**	15	15	30	35	5
Copper Strip Corrosion, Visual	ASTM D130	Max. 1	1a	1a	1a	1a	1a
Foam Sequence I, mL	ASTM D892	Max. 100/10	30/0	30/0	0/0	0/0	0/0
Foam Sequence II, mL		Max. 100/10	10/0	10/0	20/0	40/0	30/0
Foam Sequence III, mL		Max. 100/10	0/0	0/0	0/0	0/0	0/0
Weld Load, Kgf	ASTM D2783	(1)	250	250	315	250	250
FZG, Stages Passed	ISO 14635-1	Min. 12	>12	>12	>12	>12	>12
FZG Micropitting Test at 90°C	FVA 54/7						
First Stepwise Phase, LS		10	>10	>10	>10	>10	>10
Second Stepwise Phase, LS		10	>10	>10	>10	>10	>10
GF Class		High	High	High	High	High	High
FZG Micropitting Test at 60°C	FVA 54/7						
First Stepwise Phase, LS		10	>10	>10	>10	>10	>10
Second Stepwise Phase, LS		10	>10	>10	>10	>10	>10
GF Class		High	High	High	High	High	High

All technical data are 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

Performance Levels

- David Brown Type G lubricant
- DIN 51517 Part III
- Flender Gear Units - Revision 16.1 T 7300 Table A-g
- HANSEN (HP1, HP2, HPP, P4 and M4ACC)

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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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