

MARINE PLANTOGEAR 100 – 150 S

Environmentally acceptable lubricating oil and EP industrial gear oil based on synthetic saturated esters.

Description

MARINE PLANTOGEAR 100 S and 150 S products are environmentally acceptable industrial gear oils based on special saturated synthetic esters which guarantee high ageing resistance and excellent wear protection - very good lubricity. The products have a good solvency (good detergent dispersant properties due to the polar ester base oils).

MARINE PLANTOGEAR 100 S and 150 S products have high scuffing protection (FZG > 12). The selected antiwear/ extreme pressure additive system guarantees the wear protection of bearings due to the excellent FE8 roller bearing wear test results (excellent wear protection of roller bearings under severe conditions, high load, low velocity).

Application

MARINE PLANTOGEAR 100 S and 150 S products can be used as universal CLP industrial gear oils. MARINE PLANTOGEAR 100 S and 150 S products can be used in spur, bevel, planetary and worm gears, especially in environmentally sensitive areas. The products can also be used in drive systems in water protection areas where ground and surface water can be polluted by oil leakages. The formulation of MARINE PLANTOGEAR 100 S and 150 S is based on fully synthetic saturated high-performance esters based on natural renewable resources. The products can be used in applications where the use of synthetic lubricants are of advantage.

Advantages

- Good corrosion protection
- Excellent wear protection for gears and bearings
- Excellent viscosity temperature behaviour, high viscosity index (VI)
- Miscible with mineral oil and polyalphaolefin gear oils
- Natural dissolving properties
- Highest shear stability
- Based on renewable resources
- Rapidly biodegradable (> 60% acc. to OECD 301 B)
- High resistance to ageing
- Good air release
- Low foaming tendency
- Optimally suited for high and low temperature use

EU Ecolabel : DE/027/273



PI 4-1449, Page 1; PM 4 – 10.20

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Specifications

MARINE PLANTOGEAR 100 S and 150 S fulfill and surpass the requirements according to:

- DIN 51517-3: CLP
- ISO 6743-6 and ISO 12925-1: CKC / CKD / CKE / CKT
- AGMA 9005/E02: EP
- EU Ecolabel

The products are listed, recommended, approved by important gear manufacturers, resp. they fulfill and surpass their requirements.

Instructions for use

The MARINE PLANTOGEAR 100 S and 150 S products can be used as a universal industrial gear oil. Before the usage of PLANTOGEAR S oils, it is recommended to carry out a flushing step in advance in order to avoid respectively reduce any contamination with previously used corrosion protection oils (new gear boxes) or mineral oil based gear oils (existing gear boxes). Otherwise the running-in oil and the corrosion protection oil remain in the gear and may contaminate the MARINE PLANTOGEAR 100 S and 150 S products. Under unfavourable conditions this can result in increased foam values and the biodegradability of the PLANTOGEAR 100 and 150 S products may be affected negatively. The content of the residual mineral oil should, therefore, be reduced as recommended in the ISO 15380 guideline to approximately < 2% mineral oil in MARINE PLANTOGEAR 100 S and 150 S.

The internal tank and gear coatings should be compatible with ester based products.

Paints which are not compatible to esters are not recommended. In general two components coating systems can be used with ester based products. The use of stainless steel tanks or stainless steel filter housings is recommended.

When deep filtration filters are used, the good solvency, dissolving properties of the MARINE PLANTOGEAR 100 S and 150 S products can reduce the filter life.

Clean/check or replace the oil filters in the system after one week after changing-over to MARINE PLANTOGEAR 100 S and 150 S products. To ensure a safe operation, when using MARINE PLANTOGEAR 100 S and 150 S in gear and circulating systems, remove any water that may have penetrated the systems before start-up or after longer periods of down-time. We recommend the use of suitable dryer systems and filtration units. Use ester-resistant compatible sealing materials and plastic materials in general. We recommend the use of viton material in dynamic stressed seals.

Observe the change-over recommendations according to ISO 15380.

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Typical technical data:

Product name		MARINE PLANTOGEAR		
		100 S	150 S	
Properties	Unit			Test method
Type of lubricant acc. to DIN 51517-3, Labeling acc. to DIN 51502		CLP 100	CLP 150	DIN 51502
Labeling acc. to ISO 12925-1		CKC 100	CKC 150	ISO 12925-1
Viscosity class acc. to DIN ISO 3448		ISO VG 100	ISO VG 150	DIN ISO 3448
Kinematic viscosity at 40 °C	mm ² /s	100	150	DIN EN ISO 3104
at 100 °C	mm ² /s	13.7	19.1	
Viscosity index		138	145	DIN ISO 2909
Density at 15 °C	kg/m ³	924	926	DIN 51757
Flash point in open cup acc. to Cleveland	°C	280	280	DIN EN ISO 2592
Pourpoint	°C	-33	-30	DIN ISO 3016
Neutralisation number	mg KOH/g	0.7	0.7	DIN 51558-1
Water content (%)	%	< 0.05	< 0.05	DIN 51777-2
Foaming immediately and after 10 min.				ISO 6247
Seq. I, at 24 °C	ml	0/0	0/0	
Seq. II, at 93 °C	ml	20/0	20/0	
Seq. III, at 24 °C	ml	0/0	0/0	

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Typical technical data (continued):

Product name		MARINE PLANTOGEAR			Test method
		100 S	150 S		
Properties	Unit				
Demulsifying at 82 °C (ISO VG 100 and higher)	min	15	15		ISO 6614
Copper corrosion (3 h, 100 °C)	degree of corrosion	1	1		DIN EN ISO 2160
Steel corrosion, Procedure A: distilled water	degree of corrosion	0 - A (pass)	0 - A (pass)		DIN ISO 7120
Procedure B: synth. sea water	degree of corrosion	0 - B (pass)	0 - B (pass)		
Ageing 312 h / 95 °C					DIN EN ISO 4263-4
- Increase of viscosity at 100 °C	%	3.3	3		
- Increase of viscosity number	ml	0	0		
FZG mechanical gear test rig FZG A/8.3/90	failure load stage	> 12	> 12		DIN ISO 14635-1
FE8 wear test, D7.5/80-80, Wälzkörperverschleiß					DIN 51819-3
- roller wear	mg	< 10	< 10		
- cage wear	mg	< 100	< 100		
Effect on seal material SRE-NBR 28/SX after 7 days at 100 °C					DIN ISO 1817
Change in volume	%	+7.2	+7.5		
Change in hardness	%	- 6.2	- 6.7		
Change in tensile strength	%	- 1.2	- 1.1		
Change in elongation	%	- 14.1	- 11.7		

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The information contained in this product information is based on the experience and know-how of FUCHS SCHMIERSTOFFE GMBH in the development and manufacturing of lubricants and represents the current state-of-the-art. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pre-treatment, possible external contamination, etc. For this reason, universally-valid statements about the function of our products are not possible. Our products must not be used in aircrafts/spacecrafts or their components, unless such products are removed before the components are assembled into the aircraft/spacecraft. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application.

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Product Information

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Note

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