

## PLANTOGEAR 100 HVI, 150 HVI

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

#### Description

PLANTOGEAR 100 HVI and 150 HVI 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 deterging dispersant properties due to the polar ester base oils). PLANTOGEAR 100 HVI and 150 HVI products have high scuffing protection.

#### Application

PLANTOGEAR 100 HVI and 150 HVI products can be used as universal CLP industrial gear oils. PLANTOGEAR 100 HVI and 150 HVI 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 leaks. The formulation of PLANTOGEAR 100 HVI and 150 HVI 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.

#### Specifications

PLANTOGEAR 100 HVI and 150 HVI fulfill and surpass the requirements according to:

- DIN 51517-3: CLP
- AGMA 9005/E02: EP

#### Advantages

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

**EU Ecolabel: PLANTOGEAR 100 HVI: DE/027/177**  
**PLANTOGEAR 150 HVI: DE/027/178**



#### Better for the environment ...

- geringfügige Schädigung von Wasser und Boden bei der Anwendung
- enthält einen großen Anteil von Ausgangsstoffen auf biologischer Basis
- reduced harm for water and soil during use
- contains a large fraction of biobased material

**... better for you.**

## PLANTOGEAR 100 HVI, 150 HVI Environmentally acceptable lubricating oil and EP industrial gear oil based on synthetic saturated esters

### Instructions for use

The PLANTOGEAR 100 HVI and 150 HVI products can be used as a universal industrial gear oil in new gears as well as in used gears. New gears should be flushed and rinsed before applying PLANTOGEAR 100 HVI and 150 HVI. New gears are usually partly filled with mineral oil based corrosion protection and running in oils after manufacture. If they are not completely flushed, the running in and the corrosion protection oil remains in the gear and may contaminate the PLANTOGEAR 100 HVI and 150 HVI products. Under unfavourable conditions this can result in increased foam values and this can affect the biodegradability of the PLANTOGEAR 100 HVI and 150 HVI products negatively. The content of the residual mineral oil should, therefore, be reduced as recommended in the ISO 15380 guideline, table A1 (guidelines for changing fluid from mineral based oils to environmentally acceptable fluids) to a percentage of approximately lower than 2% mineral oil in PLANTOGEAR 100 HVI and 150 HVI.

Old gears should also be flushed and rinsed before changing over to PLANTOGEAR 100 HVI and 150 HVI in order to reduce substantially the concentration of the residual mineral oil based product.

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

Paints which are not compatible to esters are not recommended to be used. 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 PLANTOGEAR 100 HVI and 150 HVI products can reduce the filter life.

Clean/check or replace the oil filters in the system after 1 week after changing over to PLANTOGEAR 100 HVI and 150 HVI products. 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.

## PLANTOGEAR 100 HVI, 150 HVI

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

Typical technical data:

Product name		PLANTOGEAR		
		100 HVI	150 HVI	
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 <sup>2</sup> /s	100	150	DIN EN ISO 3104
Viscosity index		138	145	DIN ISO 2909
Density at 15 °C	kg/m <sup>3</sup>	926	928	DIN 51757
Flash point in open cup acc. to Cleveland	°C	> 270	> 270	DIN EN ISO 2592
Pourpoint	°C	-33	-30	DIN ISO 3016
Neutralisation number (acidic)	mg KOH/g	< 0.8	< 0.8	DIN 51558-1
Water content	ppm	< 500	< 500	DIN 51777-2
Foaming immediately and after 10 min.				ISO 6247
Seq. I, at 24 °C	ml	10/0	10/0	
Seq. II, at 93 °C	ml	20/0	20/0	
Seq. III, at 24 °C	ml	0/0	0/0	

PI 4-1455, Page 3; PM 4 / 02.16UK

**FUCHS LUBRICANTS (UK) PLC**  
New Century Street, Hanley  
GB-Stoke-on-Trent, Staffordshire, ST1 5HU

Tel +44-1782 -20 37 00  
Fax +44-1782 -20 20 73  
contact-uk@fuchs-oil.com



Health, Safety and Environment - information is provided for products in the relevant Safety Data Sheet. This provides guidance on potential hazards, precautions and first-aid measures, together with environmental effects and disposal of used products.

While the information and figures given here are typical of current production and conform to specification, minor variations may occur. No warranty expressed or implied is given concerning the accuracy of the information or the suitability of the products

## PLANTOGEAR 100 HVI, 150 HVI

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

Typical technical data (continued):

Product name	PLANTOGEAR			
		100 HVI	150 HVI	
Properties	Unit			Test method
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, method A: distilled water	degree of corrosion	0 - A (pass)	0 - A (pass)	DIN ISO 7120
Ageing 312 h / 95 °C				DIN EN ISO 4263-4
- Increase of viscosity at 100 °C	%	< 5	< 5	
- 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	< 20	< 20	
- cage wear	mg	< 100	< 100	
Effect on seal material SRE-NBR 28/SX after 7 days ± 2 h at (100 ± 1) °C				DIN ISO 1817
Change in volume	%	8.2	8.5	
Change in hardness	%	-7.2	-7.7	

PI 4-1455, Page 4; PM 4 / 02.16UK

**FUCHS LUBRICANTS (UK) PLC**  
New Century Street, Hanley  
GB-Stoke-on-Trent, Staffordshire, ST1 5HU

Tel +44-1782 -20 37 00  
Fax +44-1782 -20 20 73  
contact-uk@fuchs-oil.com



Health, Safety and Environment - information is provided for products in the relevant Safety Data Sheet. This provides guidance on potential hazards, precautions and first-aid measures, together with environmental effects and disposal of used products.

While the information and figures given here are typical of current production and conform to specification, minor variations may occur. No warranty expressed or implied is given concerning the accuracy of the information or the suitability of the products