Berusynth GPX
a new generation of polyalphaolefin based gear oil

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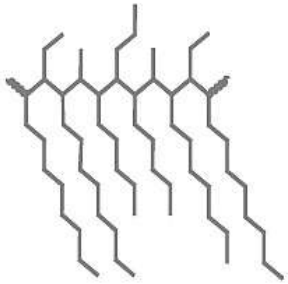
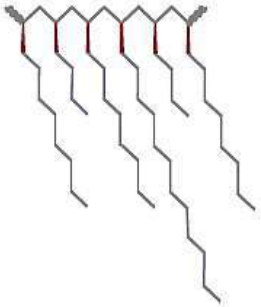
Chemical composition

- Based on polyalphaolefin base stock of latest generation produced with metallocene catalyst technology, high-performance ester oil and a special additive package of latest generation
- Special polyalphaolefin base stock enables a high viscosity with a narrow distribution of the molecular weight and a very even structure without short side chains.



Conventional polyalphaolefin

- Short and long side chains
- Randon side chain orientation
- Prominent backbone



Metallocene polyalphaolefin

- Uniform comb-like structure
- Absence of short side chains
- High viscosity
- Narrow molecular weight distribution

Advantages

- Extremely high viscosity index and therefore thicker lubricating film at higher operating temperatures
- Extremely low tendency to foam
- Excellent deep temperature properties
- Very high oxidation stability and therefore longer oil change intervals
- Improved protection against wear and seizing
- Very high resistance to micro-pitting
- Low friction value resulting in lower power loss
- High working temperature range
- Improved filterability

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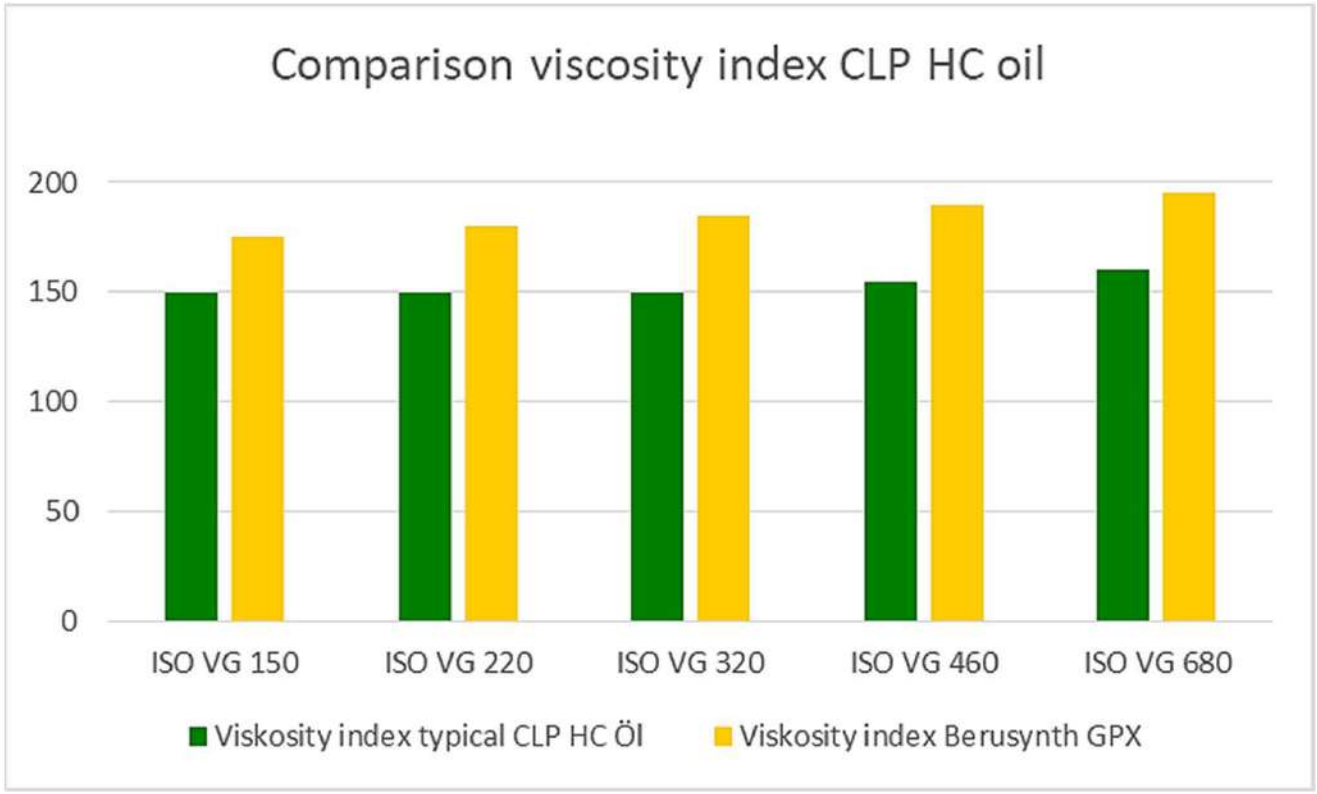
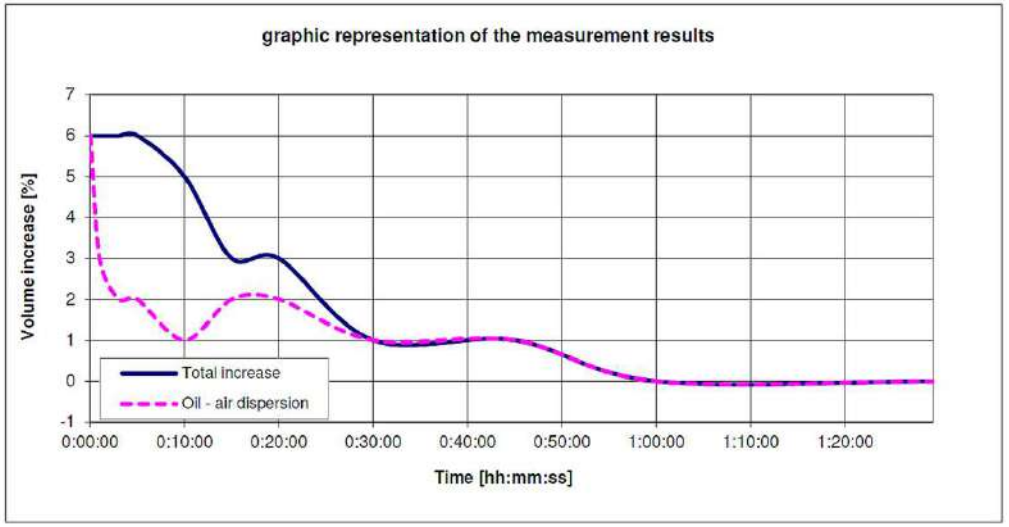
Extreme high viscosity index



Extreme low tendency to foam

Flender Foam Test acc. ISO 12152 for Berusynth GPX 320

Time after stop of motor	Temperature [°C]	Volume changes [%]					Rating
		oil-air dispersion	surface foam	Total increase	Limit *1		
					oil-air dispersion	Total increase	
0:00:00	28.5	6	-	6			
0:01:00	28.5	3	3	6		≤ 15	passed
0:03:00	28.3	2	4	6			
0:05:00	28.0	2	4	6	≤ 10		passed
0:10:00	27.5	1	4	5			
0:15:00	27.0	2	1	3			
0:20:00	26.8	2	1	3			
0:30:00	26.5	1	0	1			
0:45:00	26.0	1	0	1			
1:00:00	25.8	0	0	0			
1:30:00	25.0	0	0	0			
						Total evaluation:	passed



1 minute after motor stop

5 minutes after motor stop

Improved protection against wear

FAG FE 8 test D 7,5/80–80 according DIN 51819-3

BECHEM FE 8 test rig

Cage and rolling elements
after the test

Race track after the test

- Limit according to DIN 51517-3 and Flender max. 30 mg wear of rolling elements
- Berusynth GPX oils achieves values below 8 mg

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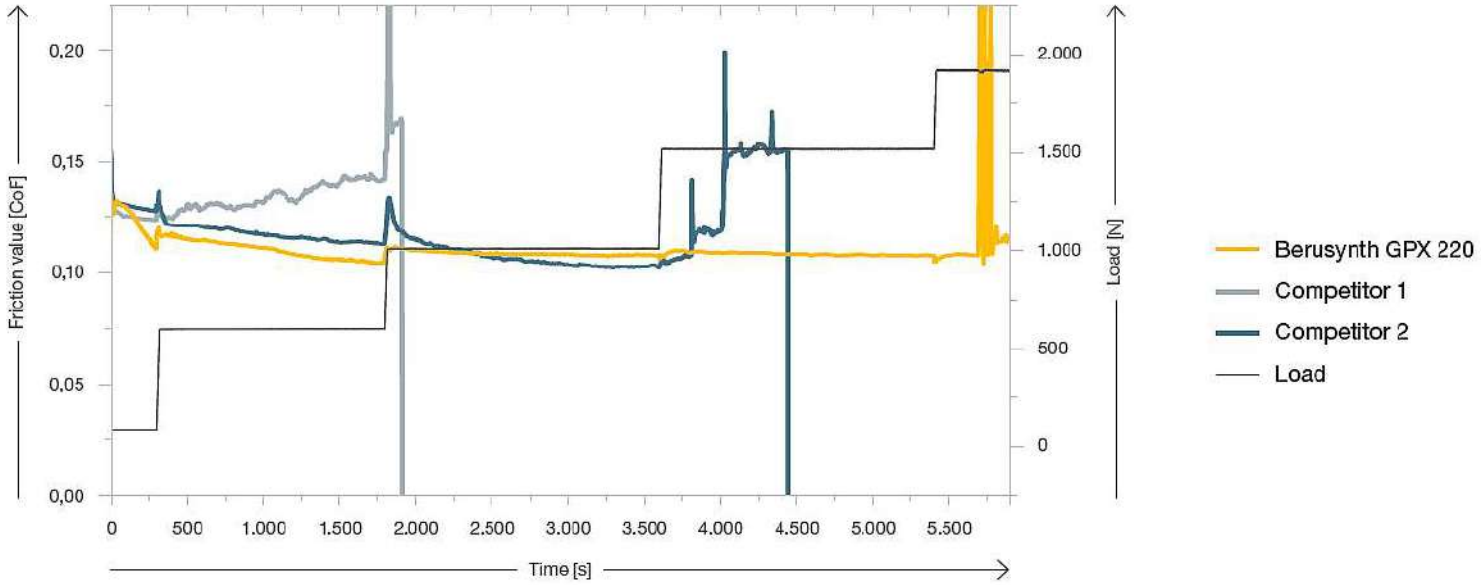
Improved protection against wear
Berusynth GPX 220

SRV FZG load level test according to DIN 51834-4, 80 °C with friction pairing cylinder (6 x 8 mm) against lapped plate



- scuffing occurs with competitor oils in ISO VG 220 at a lower force and the lubricating film breaks down after a shorter running time
- Berusynth GPX 220 achieves a longer running time, withstands higher loads and achieves a lower friction value over the entire running time

Specifications

The oils of the Berusynth GPX series meet the requirements of

- DIN 51517-3: 2018-09 CLP
- ANSI/AGMA 9005-F16: 2016 AS
- ISO 12925-1: 2018-01 CKD
- ISO 12925-1-2018-01 CKSMP
- GB 5903: 2011 L-CKD

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Properties

Properties	Standard	Unit	Requirement acc. DIN 51517-3	Requirement acc. Flender	Berusynth GPX 150	Berusynth GPX 220	Berusynth GPX 320	Berusynth GPX 460	Berusynth GPX 680
Kinematic viscosity at 40 ° C	DIN 51562	mm²/s			150	220	320	460	680
Viscosity index	DIN ISO 2909				177	182	186	191	197
Flash point	DIN ISO 2592	° C	≥ 200		≥ 230	≥ 230	≥ 230	≥ 230	≥ 230
Pourpoint	DIN ISO 3016	° C	≤ -9		-48	-48	-45	-45	-36
Four ball weld load	ASTM D 2783	kgf			250	250	250	250	315
FZG test A/8.3/90 - M	DIN ISO 14635-1	Load stage	≤ 12	> 12	> 12	> 12	> 12	> 12	> 12
FZG micro-pitting test GT-C/8.3/90	DIN 3990-16	Load stage	No requirements	10	10	10	10	10	10
FZG micro-pitting test GT-C/8.3/90	DIN 3990-16	rating	No requirements	high	high	high	high	high	high
Antifriction bearing wear test FE 8 machine D 7,5/80–80 Rolling elements wear, max.	DIN 51819-3	mg	≤ 30	< 30	< 8	< 8	< 6	< 4	< 4
Oxidation resistance (312 h/121 ° C) Increase of viscosity at 100 ° C	DIN ISO 4263-4	%	≤ 6		< 3	< 3	< 3	< 4	< 4
Flender foam test increase in volume after 1 minute	ISO 12152	%	≤ 15	≤ 15	< 5	< 5	< 10	< 10	< 10
Flender foam test increase in volume after 5 minutes	ISO 12152	%	≤ 10	≤ 10	< 2	< 2	< 2	< 2	< 2

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