

Introducing EHC 340 MAX™

A new generation extra heavy neutral base stock



ExxonMobil

Breaking new ground – introducing a new Group II extra heavy neutral base stock to meet both the need for better performance and efficient supply

The Singapore Resid Upgrade Project will expand large-scale production of ExxonMobil's global EHC™ Group II slate to meet growing demand for high-performance lubricants. The project introduces a new Group II extra heavy base stock called EHC 340 MAX™ into the global market in 2025.

ExxonMobil's technology to upgrade bottom-of-the-barrel products into higher-value lubricant base stocks enables the production of an extra heavy base stock with the oxidative stability and VI attributes of a Group II molecule, which is light in color and clear and bright in appearance.



Growing our EHC™ Base Stock Slate to meet the world's growing needs

ExxonMobil Basestocks is committed to delivering an advanced product slate designed to help you formulate your products better.

Our EHC 340 MAX™ base stock is part of our global Group II base stock slate for formulation and qualification of automotive lubricants. With base oil interchange (BOI) and viscosity grade read-across (VGRA) capabilities, our EHC Base Stock Slate offers broad blend coverage and simplified qualification testing across the globe.

With similar composition and performance to other EHC base stocks, EHC 340 MAX is part of the global EHC series designed to help formulate a comprehensive viscosity range of industrial lubricants.

EHC 340 MAX containing lubricants show high oxidative stability, a wide temperature range of performance and light color. The outstanding low temperature performance and oxidative stability of EHC 340 MAX enables excellent performance of higher viscosity lubricants in a variety of applications. The high viscosity and viscosity index (VI) of EHC 340 MAX ideally position the product as a cost effective replacement to alternative high viscosity base stocks, traditional thickeners and viscosity modifiers. The light color of EHC 340 MAX enables blended products with excellent aesthetic properties.



EHC 340 MAX

- Group II
- Superior low-temperature performance*
- High saturates
- Light color



EHC 340 MAX expands the EHC Base Stock Slate

- Base oil interchange and viscosity grade read-across within EHC Base Stock Slate: EHC 45, EHC 50, EHC 65, EHC 110, EHC 120, EHC 340 MAX
- Designed to cover most API, ACEA and key industrial lubricants claims
- Enables formulation of ISO 460 and higher, as well as SAE 25W-xx

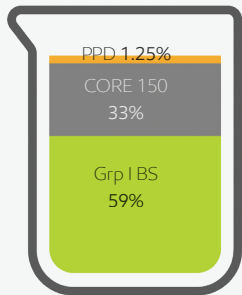
*vs Group I base stocks

Lower your Automotive Gear Oils' formulation costs

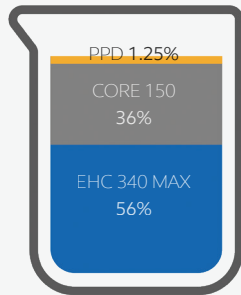
Formulate robust and competitive SAE 80W-90 API GL-5/MT-1 Gear Oils while improving Brookfield viscosity

- Ability to lower XHN treat rate with co-base stock optimization by 5-50%
- Potential to lower pour point depressant (PPD) treat rate 44-75%
- Formulate with EHC™ or CORE™ base stocks for maximum flexibility

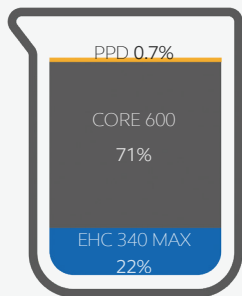
Base Oil & PPD Composition



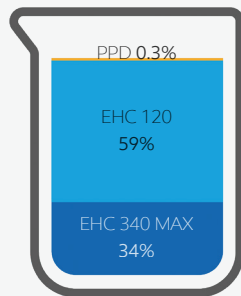
Grp I BS
+ CORE 150



EHC 340 MAX
+ CORE 150



EHC 340 MAX
+ CORE 600



EHC 340 MAX
+ EHC 120

	Grp I Bright Stock & MN	EHC 340 MAX & Grp I MN	EHC 340 MAX & Grp I HN	EHC 340 MAX & Grp II HN
Composition%				
Group I BS	58.95			
EHC 340 MAX™		55.7	22	33.6
CORE 150	33.16	36.41		
CORE 600			70.66	
EHC 120				59.46
Pour point depressant	1.25	1.25	0.7	0.3
Additive package	6.64	6.64	6.64	6.64
	Grp I Bright Stock & MN	EHC 340 MAX & Grp I MN	EHC 340 MAX & Grp I HN	EHC 340 MAX & Grp II HN
Measured properties				
KV at 100°C, cSt	15.4	15.7	14.66	15.6
Brookfield viscosity at -26°C, cP	203,000	74,000	134,000	63,000
Pour point, °C	-27	-33	-30	-30

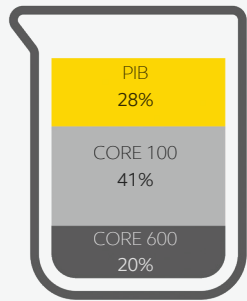
Dependent on additive chemistry and formulation approvals. ExxonMobil measurements with applicable additive packages. External factors, such as price and quality variation, VM diluent oil, etc., may cause deviations from these assessments; they are intended to be starting points for formulation evaluations. Lubricant blender is responsible for making their own assessment and obtaining appropriate approvals and licensing of all formulations.

Lower your Automotive Gear Oils' formulation costs

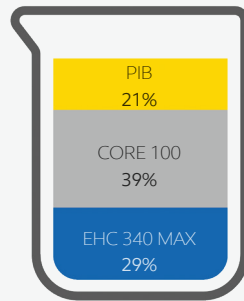
Formulate robust and competitive SAE 80W-140 API GL-5/MT-1 Gear Oils

- Potential to lower PIB treat rate by 25%
- Potential to lower PPD treat rate
- Formulate with EHC™ or CORE™ base stocks for maximum flexibility

Base Oil & Thickener Composition



PIB Thickener
& Grp I Base
Stocks



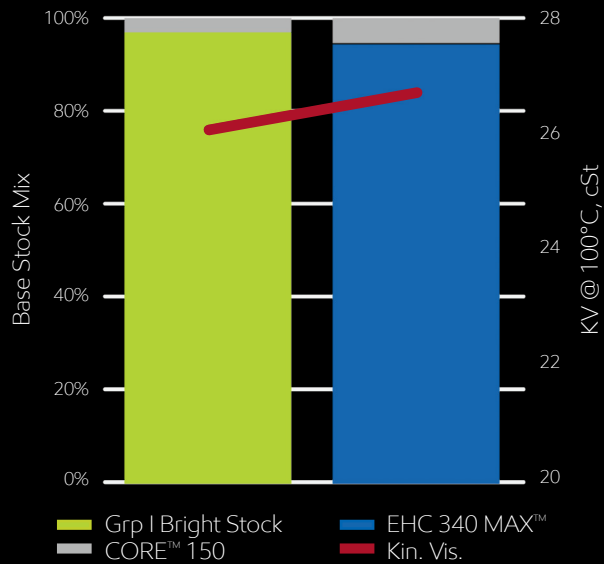
EHC 340 MAX
& Grp I Base
Stocks

	PIB Thickener & Grp I Base Stocks	PIB Thickener, EHC 340 MAX & Grp I Base Stocks
Composition%		
PIB thickener	28	21
EHC 340 MAX		28.5
CORE 100	40.71	39.3
CORE 600	20.09	
Additive package	11.2	11.2
Measured properties		
KV at 100°C, cSt	26.0	26.2
Brookfield viscosity at -26°C, cP	106,800	103,600
Pour point, °C	-27	-30

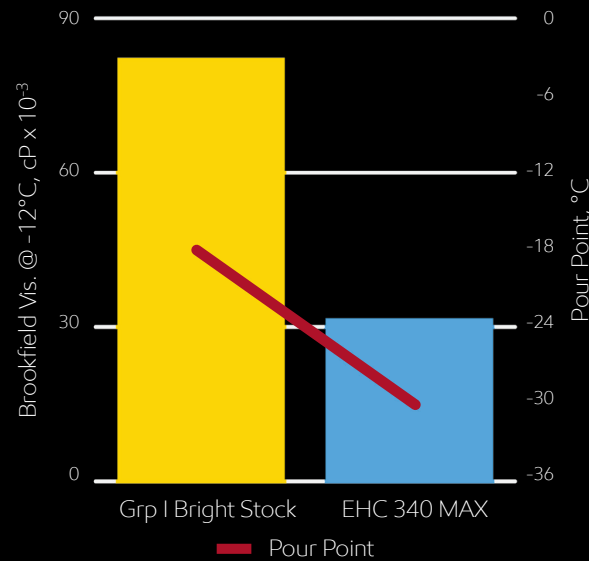
Improve your Automotive Gear Oils' performance

Formulate robust and competitive SAE 85W-140 API GL-5/MT-1 Gear Oils
Enables formulators to address emerging performance needs

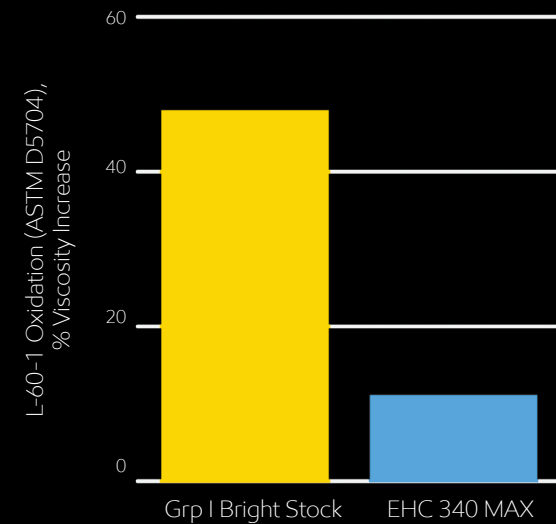
5% reduction of XHN base stock



Improves low-temp. performance



Improves oxidation stability

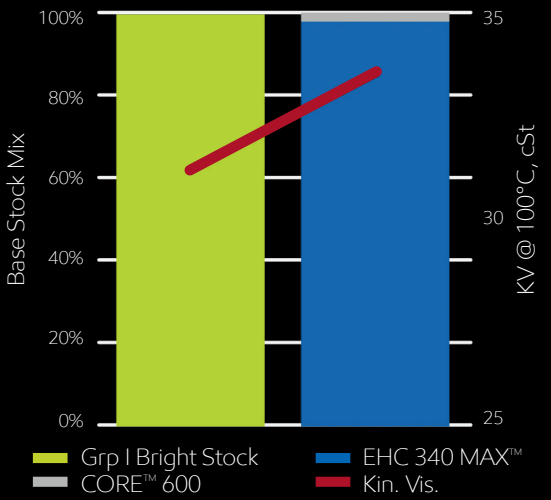


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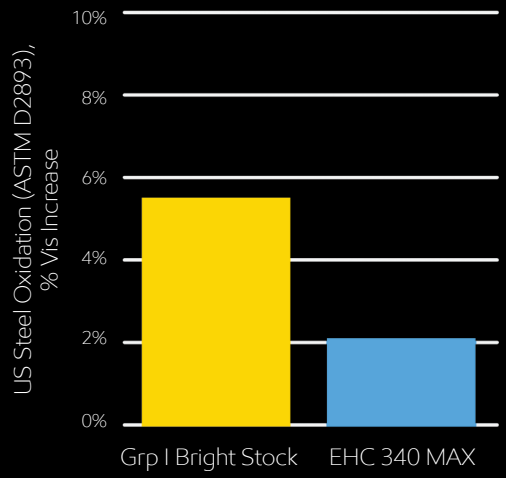
Improve your Industrial Gear Oils' performance

ISO 460 Industrial Gear Oil

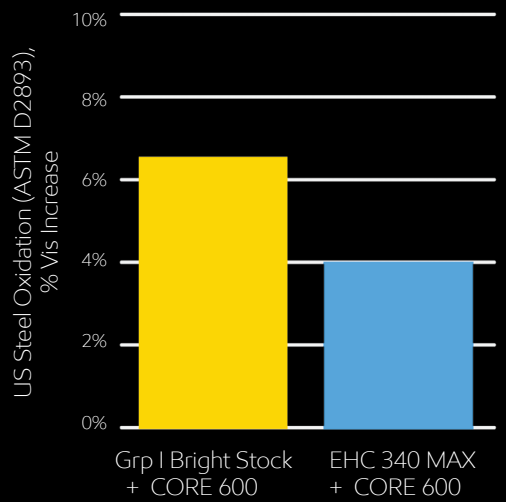
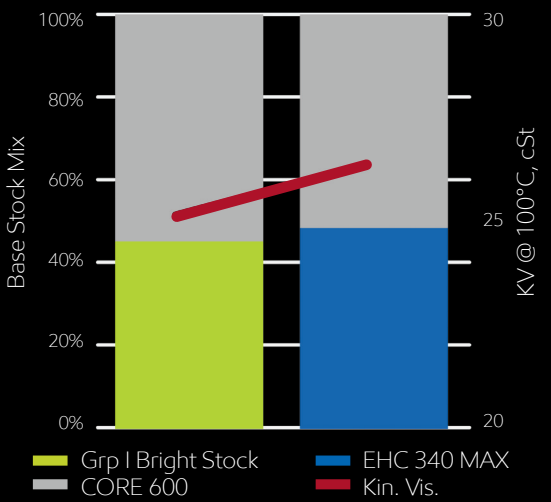
Improved Viscometrics



Improved Oxidative Stability



ISO 320 Industrial Gear Oil



Adjustments to defoamer and demulsifier chemistry may be needed

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Expand performance of your mineral greases*

Potential improvements in:



Low-temperature torque



Low-temperature mobility

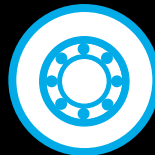


Oxidative stability

Similar:



Thickener efficiency



Mechanical stability



Processing conditions



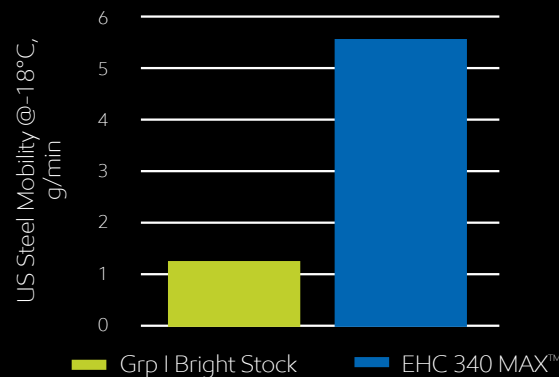
*Based on testing of ISO 220 and ISO 460, NLGI Grade 2 greases

Enable higher performance greases*

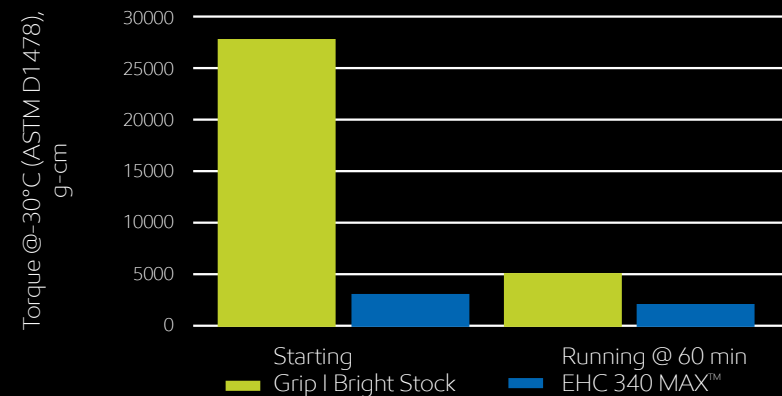
Significantly improve performance in NLGI 2 ISO 460 grease

- Enhanced key low temperature properties
- Better high temperature performance and oxidation stability

Improves low temperature mobility

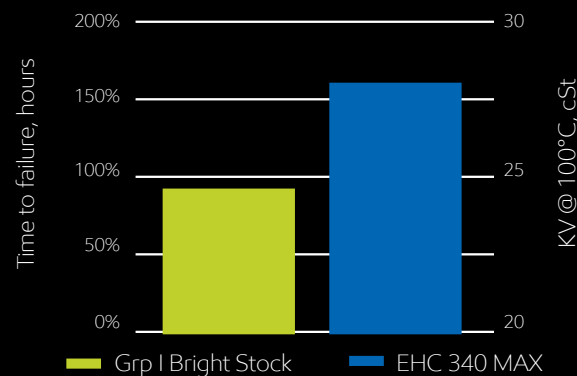


Improves low temperature torque



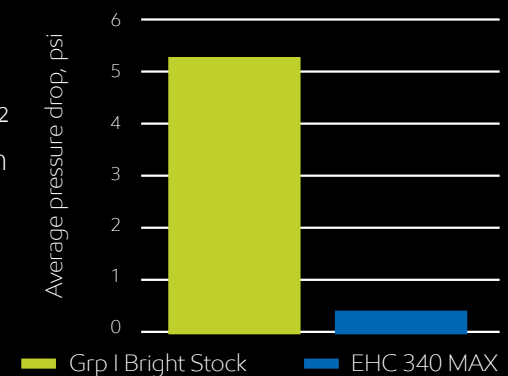
FE9 Test
DIN 51821
Temperature : 120°C
Speed : 600 rpm
Load : 1500 N axial

Improved time to failure



Oxidation Stability
ASTM D942
Temperature : 99°C
Pressure : 110 psi O₂
Test Duration : 100 h

Reduces pressure drop



* Formulated with simple lithium thickener and 1 wt% amine antioxidant

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EHC 340 MAX™ formulation value elements*

Application	EHC 340 MAX usage	Rebalance to lower thickener	Lower PPD usage	Longer lubricant life/ lower additive usage
Automotive gear oils	●	●	●	●
Industrial gear oils	●	●	●	●
Automotive engine oils (heavy grades)	●	●	●	
Grease	●			●
Marine CLO	●			

*Compared to Grp I Bright Stock

For more information, contact your local
representative or visit our website
exxonmobil.com/basestocks

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