



Syncon® EP Plus Gear Oil

Syncon EP Plus Gear Oil is a premium quality, synthetic, extreme-pressure industrial gear lubricant developed for the lubrication of enclosed gear drives and heavily loaded plain or rolling-element bearings operating at extreme temperatures or in severe service. It is suitable for use over a wider temperature range than conventional mineral oil-based gear oils. It meets the performance requirements of major gear drive manufacturers.

Syncon EP Plus Gear Oil is formulated with synthetic polyalphaolefin (PAO) base oils, a viscosity modifier and a non-chlorinated extreme-pressure additive package. It has outstanding oxidation resistance and thermal stability at high temperatures to help minimize deposit formation and provide long service life. It has high load-carrying capacity for protection against scuffing and wear, protects against rust and corrosion, and is resistant to excessive foaming that can interfere with proper lubrication. It has a high viscosity index and low pour point for use in equipment operating at extreme temperatures or over a very wide temperature range.

Applications

- Heavily loaded enclosed gear drives, such as those found in mine hoists and mining machinery
- Enclosed industrial gear drives operating at very low or very high temperatures, or operating continuously at higher than normal operating temperatures
- Heavily loaded plain and rolling-element bearings operating at extreme temperatures
- Applications where the equipment manufacturer recommends a high VI, synthetic, extreme-pressure gear oil

Syncon EP Plus Gear Oil meets the requirements of the following industry and OEM specifications:

- ANSI/AGMA Standard 9005-E02, Anti-Scuff/Anti-Wear (EP) Oils
- DIN 51517 Part 3, Lubricating Oils, Type CLP HC
- German Steel Industry SEB 181226, Type CLP HC
- ISO 12925-1:1996, Type L-CKC
- Joy Machinery TO-SHEP (ISO VG 320), TO-SMEP (ISO VG 220)
- U.S. Steel 224

**High VI Synthetic
PAO-Based
Extreme-Pressure
Industrial
Gear Lubricant**

CONTACT INFORMATION

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Features/Benefits

- Outstanding oxidation resistance and thermal stability at high temperatures
- Outstanding low-temperature properties
- High viscosity index and low pour point for use over a wide temperature range
- Excellent extreme-pressure properties
- Protects against scuffing and wear
- Protects against rust, corrosion and foaming
- Non-chlorinated additive system
- Suitable for year-round use
- Extended service intervals compared with conventional mineral oil-based gear oils

Syncon® EP Plus Gear Oil

Typical Properties

ISO Grade	150	220	320	460	680
AGMA Grade	4 EP	5 EP	6 EP	7 EP	8 EP
Specific Gravity @ 60°F	0.861	0.865	0.866	0.870	0.875
Density, lbs/gal @ 60°F	7.17	7.20	7.21	7.24	7.29
Color, ASTM D1500	1.0	1.0	1.0	1.0	1
Flash Point (COC), °C (°F)	249 (480)	249 (480)	249 (480)	249 (480)	249 (480)
Pour Point, °C (°F)	-49 (-56)	-49 (-56)	-44 (-47)	-47 (-53)	-42 (-44)
Viscosity,					
cSt @ 40°C	150	220	320	460	680
cSt @ 100°C	20.9	27.5	35.3	47.6	64.4
SUS @ 100°F	769	1,134	1,660	2,392	3,549
SUS @ 210°F	105	135	170	230	311
Viscosity Index	163	161	156	162	166
Acid Number, ASTM D974, mg KOH/g	0.76	0.76	0.76	0.76	0.76
Copper Corrosion, ASTM D130	1a	1a	1a	1a	1a
Four-Ball EP, ASTM D2783, Weld Load, kgf	315	315	315	315	315
Four-Ball Wear, ASTM D4172, Scar Diameter, mm	0.45	0.45	0.45	0.45	0.45
FZG Scuffing Test, ASTM D5182 (mod.),					
Failure Load Stage	>12	>12	>12	>12	>12
Oxidation Stability, ASTM D2893,					
Viscosity Increase @ 121°C, %	<6	<6	<6	<6	<6
Rust Test, ASTM D665 A&B	Pass	Pass	Pass	Pass	Pass
Timken OK Load, ASTM D2782, lb	70	70	70	70	70

Health and Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://w3apps.phillips66.com/NetMSDS>.

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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