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(570) 822-1151



## 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
- 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**

**Phillips66  
Lubricants.com**

U.S. Customer  
Service:  
**1-800-368-7128**

Technical Hotline:  
**1-877-445-9198**

International  
Customer Service:  
**1-832-765-2500**

E-mail address:  
**lubricants@  
p66.com**



### ***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 and corrosion
- Non-chlorinated additive system
- Suitable for year-round use
- Extended service intervals compared with conventional mineral oil-based gear oils

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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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## 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	0.847	0.848	0.855	0.861	0.867
Density, lbs/gal @ 60°F	7.06	7.06	7.12	7.17	7.22
Color, ASTM D1500	1.0	1.0	1.0	1.0	1.0
Flash Point (COC), °C (°F)	240 (464)	240 (464)	240 (464)	240 (464)	240 (464)
Pour Point, °C (°F)	-45 (-49)	-45 (-49)	-42 (-44)	-39 (-38)	-36 (-33)
Viscosity,					
cSt @ 40°C	151	218	319	463	685
cSt @ 100°C	21.7	29.0	38.2	48.9	63.3
SUS @ 100°F	773	1,119	1,646	2,404	3,581
SUS @ 210°F	108	142	185	236	306
Viscosity Index	170	172	170	166	162
Acid Number, ASTM D974, mg KOH/g	0.20	0.20	0.20	0.20	0.20
Copper Corrosion, ASTM D130	1b	1b	1b	1b	1b
Foam Test, ASTM D892	Pass	Pass	Pass	Pass	Pass
Four-Ball EP, ASTM D2783, Weld Load, kgf	315	315	315	315	315
Four-Ball Wear, ASTM D4172, Scar Diameter, mm	0.39	0.36	0.33	0.33	0.33
FZG Scuffing Test, ASTM D5182 (mod.),					
Failure Load Stage	>12	>12	>14	>14	>14
Oxidation Stability, ASTM D2893,					
Viscosity Increase @ 121°C, %	1.70	1.70	2.56	2.56	2.56
Precipitation Number, ASTM D91, ml	<0.05	<0.05	<0.05	<0.05	<0.05
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>.

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