

Bio-SynXtra™ EP Gear Oils

(ISO 46, 68, 100, 150, 220, 320, 460, 680, 1000)

Bio-SynXtra™ EP Gear Oils are high-performance, biosynthetic-blend gear lubricants designed for severe-duty gear and bearing applications. These readily biodegradable oils combine patented Stabilized™ High Oleic Base Stocks (HOBS) with advanced EP/antiwear additives to deliver exceptional thermal stability, film strength, and wear protection. They meet and exceed industry performance standards including U.S. Steel 224, AGMA 9005-E02, ISO 12925-1 CKD, DIN 51517 Part 3, David Brown DB S1.53.101, and Cincinnati Machine. These gear oils are formulated to quickly demulsify water, prevent corrosion, and extend equipment and lubricant life, even under extreme pressure and shock loading.

Benefits

- Readily biodegradable, environmentally non-toxic, not bioaccumulative
- Super high viscosity index for superior temperature performance
- Energy-conserving low-temperature flow with high-temp protection
- Excellent resistance to scuffing and micropitting
- Anti-wear, anti-rust, anti-oxidation, anti-foam fortified
- Rapid demulsibility protects gears and bearings from water damage
- EPA VGP 2013 compliant Environmentally Acceptable Lubricant (EAL)
- Non-toxic: LC-50 / EC-50 >1000 ppm (EPA/USFWS)
- USDA BioPreferred formulation from renewable agriculture
- Patented Stabilized™ additive system – oxidation, wear, cold flow
- Improved fire resistance and seal protection

Application / New Filling

- Recommended for spur, helical, bevel, and worm gear drives
- Suitable for heavy-duty and shock load environments
- Match ISO grade to OEM specification for optimal performance
- Compatible with systems requiring U.S. Steel 224, AGMA EP grades, ISO 12925-1 CKD

Specifications and Approvals

- U.S. Steel 224
- AGMA 9005-E02
- DIN 51517 Part 3
- ISO 12925-1 CKD
- David Brown S1.53.101

- Cincinnati Machine
- Renewable Content: 58.2%–66.9% depending on ISO grade
- Patented technology: US 6,383,992 and 6,534,454



Typical Specifications

Industrial Grade		Light	Medium Light	Medium	Heavy Medium	Heavy	Extra Heavy		
ISO Grade	46	68	100	150	220	320	460	680	1000
AGMA Grade	E.P. 1	E.P. 2	E.P. 3	E.P. 4	E.P. 5	E.P. 6	E.P. 7	E.P. 8	E.P. 8A
VISCOSITIES:									
@100°C., cSt. (ASTM D-445)	8.7	12.2	16.6	22.7	30.9	44	58	77	99
@40°C., cSt. (ASTM D-445)	42.7	64.2	93.5	139	203	306	426	638	925
Viscosity Index (ASTM D-2270)	188	191	193	193	196	202	207	203	201
Flash Point, COC, °C (ASTM D-92)	245	251	256	262	264	272	280	290	290
Pour Point, °C (ASTM D-97)	-45	-42	-40	-39	-38	-35	-32	-30	-27
Copper Corrosion (ASTM D-130)	1A	1A	1A	1A	1A	1A	1A	1A	1A
4-Ball Wear mm (ASTM D-4172)	.33	.30	.30	.30	.30	.30	.30	.30	.30
4-Ball EP Weld Point kg (ASTM D-2783)	250	315	315	400	400	400	400	400	400
4-Ball EP Load Wear Index	47	51	51	57	57	57	57	57	57
FZG Test A/8.3/90 (ASTM D5182)	>12	>12	>12	>12	>12	>12	>12	>12	>12
FZG Test A/16.6/90 (DIN 51354 modified)	>12	>12	>12	>12	>12	>12	>12	>12	>12
FE-8 Bearing Test (DIN 51819-3)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Demulsibility (ASTM D-2711 & D-1401)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Foam Sequence I, II, III (ASTM D-892)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Rust Prevention (ASTM D-665 A&B)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Timken Load (ASTM D-2782)	70	70	70	70	70	70	70	70	70
Renewable Content %	58.4%	60.2%	58.2%	59.8%	61.4%	64%	66.5%	66.9%	65%
RLI Product Item #	82400	82410	82420	82430	82440	82450	82460	82470	82480