



SG Series Synthetic Extreme-Pressure Gear Oil Industrial-Grade Performance & Protection

Industrial equipment requires high-quality oil to maximize efficiency. SG Series is a synthetic gear oil that meets or exceeds the most demanding industrial gearbox specifications, including the stringent FAG FE-8 Bearing Test. While many extreme-pressure (EP) gear oils do not protect against micropitting, SG Series also achieved outstanding results in industry-standard micropitting tests, ensuring it delivers superior gearbox protection.

Extreme-Pressure Protection

SG Series is engineered to prevent metal-to-metal contact and inhibit corrosion. Its shear-stable, high-viscosity-index formulation features excellent anti-foam and air-release properties to maintain a thick lubricating film. It is fortified with specialized sulfur/phosphorus EP and anti-corrosion additives. Under extreme pressures, an iron-sulfide barrier protects gear surfaces to inhibit wear, pitting and scuffing. SG Series demonstrates exceptional extreme-pressure performance in the industry-standard testing

Cold-Temperature Fluidity

The wax-free, high-viscosity-index base oils in SG Series provide extremely low pour points and excellent cold-flow properties for improved cold-temperature efficiency, easier startups and reduced need for sump heaters and seasonal oil changes.

High-Temperature Durability

SG Series is formulated with synthetic base oils that are naturally resistant to oxidation. It also contains oxidation inhibitors for increased resistance to thermal degradation, sludge formation and deposits. All viscosities pass the ISO 12925-1 (CKD) test, demonstrating exceptional high-temperature performance at 121°C (250°F) for 312 hours (13 days). SG Series helps deliver cleaner gears and a longer service life.

Superior Cleanliness

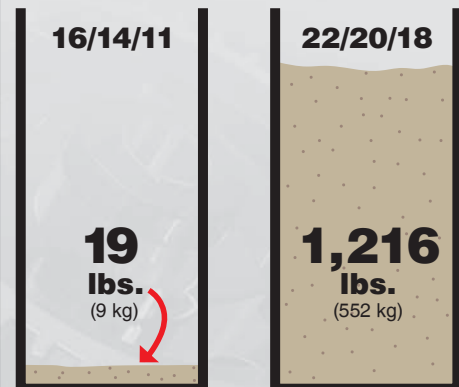
Oil cleanliness helps prolong gear and bearing life and is measured by the ISO 4406 standard, where each number represents particles of a certain size found in an oil sample. SG Series is filtered at packaging to an ISO 4406 cleanliness code of 16/14/11 as measured by laser particle counter, exceeding the cleanliness requirements of all major gearbox manufacturers.

With an ISO 4406 cleanliness code of 16/14/11, SG Series is 64 times cleaner than oils with a cleanliness code of 22/20/18, which can help extend gearbox life by up to 250%† with proper continued filtration and good maintenance practices.



- **Excellent** micropitting protection.
- **Promotes** long oil and component life.
- **Increases** cold-temperature efficiency and protection.
- **Excellent** film strength and foam suppression inhibit wear.

Cleanliness Comparison (ISO 4406)



Contaminants flowing through pump in one year at 32 gpm for 6,500 hours.

TYPICAL TECHNICAL PROPERTIES

AMSOIL SG Series Synthetic Extreme-Pressure Gear Oil

	SGL	SGM	SGN	SGO
ISO Viscosity Grade (ASTM D2422)	150	220	320	460
Filtered at packaging to ISO 4406 cleanliness	16/14/11	16/14/11	16/14/11	–
AGMA EP Gear	4 EP	5 EP	6 EP	7 EP
Kinematic Viscosity @ 100°C, cSt (ASTM D445)	22.5	29.7	40.7	54.2
Kinematic Viscosity @ 40°C, cSt (ASTM D445)	158.3	227.1	331.6	473.1
Viscosity Index (ASTM D2270)	169	170	176	181
Specific Gravity (ASTM D1298)	0.8519	0.8529	0.8524	0.8597
Density (ASTM D1298)	7.094	7.102	7.098	7.158
Flash Point °C (°F) (ASTM D92)	238 (460)	242 (468)	242 (468)	244 (471)
Pour Point °C (°F) (ASTM D97)	-45 (-49)	-42 (-44)	-39 (-38)	-36 (-33)
Acid Number (ASTM D664)	0.66	0.66	0.66	0.66
Brookfield Viscosity @ -30°C, cP (ASTM D2983)	28,115	54,990	98,741	–
Air Release @ 50°C, min. (ASTM D3427)	25.4	–	–	–
Air Release @ 90°C, min. (ASTM D3427)	–	8.98	9.75	–
Foam, ml (ASTM D892, Seq. I, II, III)	0/0, 0/0, 0/0	0/0, 0/0, 0/0	0/0, 0/0, 0/0	0/0, 0/0, 0/0
Demulsibility (ASTM D1401)	40-40-0 (25)	40-40-0 (25)	40-40-0 (25)	40-40-0 (25)
Copper Strip Corrosion Test, 121°C, 3 hrs. (ASTM D130)	1B	1B	1B	1B
Four-Ball Wear, Scar, mm				
54°C, 1800 rpm, 20 kg, 1 hr.	0.33	0.34	0.34	0.34
Four-Ball Weld Point, kgf (ASTM D2783)	250	250	250	250
Four-Ball Load Wear Index, kgf (ASTM D2783)	55	56	58	59
Falex Procedure B (ASTM D3233) (failure load, lbf)	3250	3250	3250	3750
Timken OK Load, lbf (ASTM D2782)	>90	>90	>90	>90
FAG FE-8 Bearing Test [DIN 51819-3]	Pass	Pass	Pass	Pass
FZG Failure Stage (A/8.3/90)	>12	>12	>12	>12
FZG Failure Stage (A/16.6/90)	>12	>12	>12	>12
Micropitting @ 90°C Load Stage,	>10	>10	>10	>10
GFT Classification (FVA54)	GFT = High	GFT = High	GFT = High	GFT = High

APPLICATIONS & SPECIFICATIONS

Use SG Series in severe-service industrial applications under heavy loads or shock-loading and requiring an extreme-pressure gear oil or one of the following specifications:

- AGMA 9005-E02 • AIST (U.S. Steel)* 224 • DIN 51517 Part 3
- ISO 12925-1 (CKD) • David Brown* S1.53.101 (Type E)
- Fives Cincinnati (Machine/Milacron/MAG/Lamb)*

Applications include enclosed industrial spur, bevel, herringbone and helical gears, chain drives and sprockets. Review the original equipment manufacturer (OEM) requirements and the equipment operating conditions to confirm suitability.

Contact AMSOIL Technical Services at tech@AMSOIL.com or (715) 399-TECH for more information.

Disclaimer: AMSOIL accepts no liability for any property loss or damage suffered as a result of using this product inconsistent with the applications or specifications stated on this data sheet. *All trademarked names and images are the property of their respective owners and may be registered marks in some countries. No affiliation or endorsement claim, express or implied, is made by their use.. †Based on Noria Corporation's Equipment Life Extension Chart and ISO 4406:17.



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COMPATIBILITY

SG Series is **not suitable** for automotive hypoid gears or yellow metals (copper, brass or bronze) above 100°C (212°F).

SG Series is **not compatible** with polyalkylene glycol (PAG) gear oils. Thorough flushing prior to changeover is required.

HEALTH & SAFETY

This product is not expected to cause health concerns when used for the intended applications and according to the recommendations in the Safety Data Sheet (SDS). An SDS is available at AMSOIL.com or upon request at (715) 392-7101.

Keep Out of Reach of Children. Recycle used oil and bottle.

AMSOIL products and Dealership information are available from your local AMSOIL Dealer.