

Syngear® SH®-1000 Series

Synthetic gears/Heavy Duty



Your benefits at a glance

- Thermal and oxidation stability
- Protection against wear, rust, corrosion and foaming
- High viscosity index

Your requirements - our solution

Summit Syngear SH-1000 Series gear lubricants are formulated with synthetic base stocks and fortified with select additive systems to enhance their exceptional performance. The PAO base fluid used has outstanding oxidation and thermal stability, naturally high viscosity index and excellent low temperature pumpability and fluidity. The unique additive system used provides increased oxidation stability, extreme pressure properties, and maximum protection against wear, rust, corrosion and foaming.

In today's world of efficiency improvements, there has been much emphasis placed on reducing energy requirements for equipment used in plant operations. Summit Syngear synthetic gear lubricants have proven to reduce friction, thereby reducing the input power to operate the equipment or increasing the available power output. The reduction of fluid friction results in lower lubricant operating temperatures, prolonging the life of both the lubricant and the equipment. The additive system used in this product not only reduces frictional drag, but also protects gears against failures associated with heavy loading and meets the requirements of U.S. Steel 224 specification, AGMA 9005-D94 specification, DIN 51517 Part 3 CLP specification and API GL-4 Gear Service Category.

Application

Summit Syngear SH-1000 Series gear lubricants are recommended for use in all types of enclosed gearing as well as plain and rolling element bearings. These lubricants are ideal for heavily loaded low speed gears and bearings where boundary or elasto-hydrodynamic lubrication (EHL) conditions exist, such as in mine hoist gear reducers. They are particularly recommended for gearboxes which operate under excessively high temperatures where good quality conventional oils rapidly oxidize. Summit Syngear SH-1000 Series gear lubricants may also be used in certain open gear applications, but it is recommended that Summit lubrication engineers be consulted to select the most effective method of application. Summit Syngear SH-10032, SH-10046 and SH-10068 are also recommended for use in piston or gear-type pumps, especially where pressures exceed 1000 psi or when operating over a wide temperature range.

Application notes

Summit Syngear SH-1000 Series gear lubricants are compatible with the most seal materials, paints and plastics, including nitrile Buna N, neoprene, Viton®, Teflon®, polyethylene, polyurethane, ether, fluorocarbon, polyacrylate, polysulfide, ethylene acrylic, epoxy, plasticol, PVC, acrylic paint and lacquer.

Material safety data sheets

Material safety data sheets can be requested via our website <https://www.klsummit.com>. You may also obtain them through your contact person at Summit Lubrication.

Characteristics	SYNGEAR SH-1010	SYNGEAR SH-1015	SYNGEAR SH-1022	SYNGEAR SH-1032
Article number	340126	340453	340454	340455
Service temperature, lower limit		-35 °C		
Service temperature, upper limit		140 °C		
Density	0.854 g/cm ³	0.865 g/cm ³	0.87 g/cm ³	0.87 g/cm ³
Flash point	204 °C		200 °C	200 °C

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Flash point, DIN EN ISO 2592, Cleveland open cup	≥ 200 °C			
Foam test, ISO 6247 / ASTM D892, 24°C, sequence I	≤ 100/10 ml			
Foam test, ISO 6247 / ASTM D892, 24°C, sequence III	≤ 100/10 ml			
Foam test, ISO 6247 / ASTM D892, 93.5°C, sequence II	≤ 100/10 ml			
ISO viscosity grade, DIN ISO 3448, ISO VG	150			
Kinematic viscosity, 100°C	12.9 mm ² /s		25.8 mm ² /s	33.4 mm ² /s
Kinematic viscosity, 40°C	95.7 mm ² /s		229 mm ² /s	326 mm ² /s
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 100°C	approx. 18 mm ² /s			
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 40°C	approx. 150 mm ² /s			
Viscosity index	132		144	145
Viscosity index, DIN ISO 2909	≥ 130			
Copper corrosion	1 - - corrosion degree		1 - - corrosion degree	1 - - corrosion degree
Steel corrosion	passed		passed	passed
Pour point	-41 °C		-43 °C	-44 °C
Pour point, DIN ISO 3016	≤ -39 °C			
API scuffing load capacity	API GL 4			
FAG FE8 rolling bearing test, DIN 51819-3, D-7.5 / 80-80, wear of cage	≤ 200 mg			
FAG FE8 rolling bearing test, DIN 51819-3, D-7.5 / 80-80, wear of rolling elements	≤ 30 mg			
Four-ball tester: wear characteristics	0.30 mm	0.39 mm	0.34 mm	0.30 mm
Four-ball tester, welding load	200 kgf	315 kgf	315 kgf	315 kgf
FZG scuffing test	12+		12+	12+
FZG scuffing test, DIN ISO 14635-1, based on standard, A / 16.6 / 90, failure load stage	≥ 12			
FZG scuffing test, DIN ISO 14635-1, A / 8.3 / 90, failure load stage	≥ 14			
Timken test	65 lbs	65 lbs	65 lbs	65 lbs
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 months	60 months	60 months	60 months

Characteristics	SYNGEAR SH-1046	SYNGEAR SH-1068	SYNGEAR SH-10032	SYNGEAR SH-10046
Article number	340456	340457	340124	340202

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Characteristics	SYNGEAR SH-1046	SYNGEAR SH-1068	SYNGEAR SH-10032	SYNGEAR SH-10046
Service temperature, lower limit				
Service temperature, upper limit				
Density	0.879 g/cm ³	0.89 g/cm ³	0.838 g/cm ³	0.845 g/cm ³
Flash point	200 °C	200 °C	204 °C	204 °C
Flash point, DIN EN ISO 2592, Cleveland open cup				
Foam test, ISO 6247 / ASTM D892, 24°C, sequence I				
Foam test, ISO 6247 / ASTM D892, 24°C, sequence III				
Foam test, ISO 6247 / ASTM D892, 93.5°C, sequence II				
ISO viscosity grade, DIN ISO 3448, ISO VG				
Kinematic viscosity, 100°C	44.1 mm ² /s	55.2 mm ² /s	5.8 mm ² /s	7.4 mm ² /s
Kinematic viscosity, 40°C	485 mm ² /s	688 mm ² /s	31.0 mm ² /s	42.9 mm ² /s
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 100°C				
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 40°C				
Viscosity index	144	141	132	137
Viscosity index, DIN ISO 2909				
Copper corrosion	1 - - corrosion degree	1 - - corrosion degree	1 - - corrosion degree	1 - - corrosion degree
Steel corrosion	passed	passed	passed	passed
Pour point	-43 °C	-37 °C	-50 °C	-40 °C
Pour point, DIN ISO 3016				
API scuffing load capacity				
FAG FE8 rolling bearing test, DIN 51819-3, D-7.5 / 80-80, wear of cage				
FAG FE8 rolling bearing test, DIN 51819-3, D-7.5 / 80-80, wear of rolling elements				
Four-ball tester: wear characteristics	0.30 mm	0.30 mm	0.50 mm	0.40 mm
Four-ball tester, welding load	315 kgf	315 kgf	200 kgf	200 kgf
FZG scuffing test	12+	12+	12+	12+
FZG scuffing test, DIN ISO 14635-1, based on standard, A / 16.6 / 90, failure load stage				
FZG scuffing test, DIN ISO 14635-1, A / 8.3 / 90, failure load stage				
Timken test	65 lbs	65 lbs	60 lbs	60 lbs

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Characteristics	SYNGEAR SH-1046	SYNGEAR SH-1068	SYNGEAR SH-10032	SYNGEAR SH-10046
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 months	60 months	60 months	60 months

Characteristics	SYNGEAR SH-10068	SYNGEAR SH-1100	SYNGEAR SH-1150
Article number	340125	340458	340253
Service temperature, lower limit			
Service temperature, upper limit			
Density	0.85 g/cm ³	0.89 g/cm ³	0.883 g/cm ³
Flash point	204 °C	200 °C	204 °C
Flash point, DIN EN ISO 2592, Cleveland open cup			
Foam test, ISO 6247 / ASTM D892, 24°C, sequence I			
Foam test, ISO 6247 / ASTM D892, 24°C, sequence III			
Foam test, ISO 6247 / ASTM D892, 93.5°C, sequence II			
ISO viscosity grade, DIN ISO 3448, ISO VG			
Kinematic viscosity, 100°C	9.9 mm ² /s	70.8 mm ² /s	95.8 mm ² /s
Kinematic viscosity, 40°C	67.1 mm ² /s	959 mm ² /s	1513 mm ² /s
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 100°C			
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 40°C			
Viscosity index	130	122	143
Viscosity index, DIN ISO 2909			
Copper corrosion	1 - - corrosion degree	1 - - corrosion degree	1 - - corrosion degree
Steel corrosion	passed	passed	passed
Pour point	-42 °C	-34 °C	-27 °C
Pour point, DIN ISO 3016			
API scuffing load capacity			
FAG FE8 rolling bearing test, DIN 51819-3, D-7.5 / 80-80, wear of cage			
FAG FE8 rolling bearing test, DIN 51819-3, D-7.5 / 80-80, wear of rolling elements			
Four-ball tester: wear characteristics	0.30 mm	0.30 mm	0.30 mm
Four-ball tester, welding load	200 kgf	400 kgf	400 kgf

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Characteristics	SYNGEAR SH-10068	SYNGEAR SH-1100	SYNGEAR SH-1150
FZG scuffing test	12+	12+	12+
FZG scuffing test, DIN ISO 14635-1, based on standard, A / 16.6 / 90, failure load stage			
FZG scuffing test, DIN ISO 14635-1, A / 8.3 / 90, failure load stage			
Timken test	65 lbs	65 lbs	65+ lbs
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 months	60 months	60 months

Summit Lubrication

Your expert in specialty lubricants. Since 1982, we have partnered with you to bring you the right solution and advanced lubrication technologies. With over 500 products, from air and gas compressor oils to refrigeration oils, we develop top-of-the-line products tailored to your specific needs. Your success is our success.

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