

Beyond Synthetic™

Synergy[®] is an ultra-tough, long life, EP industrial gear oil proven to make gears run smoother, quieter, cooler and longer without overhauls. Synergy[®] gains its performance advantage over competing mineral and synthetic oils through its superior blend of synthetic base oils plus Synslide[®] additive technology, Royal Purple's unique, proprietary, noncorrosive, EP technology.

Synergy[®] protects gears in severe service applications where other EP oils fail. Synergy[®] is recommended for users looking for longer oil life and significantly improved gear box reliability and performance.

For more information, please request Royal Purple's "Gear Lubrication Manual."

Synslide[®] additive technology makes the difference!

Synthetic oils enable Royal Purple to make superior lubricants, but it is Royal Purple's advanced Synslide[®] additive technology that gives Royal Purple's EP lubricants their amazing performance advantages. Synslide[®] additive technology truly is *beyond synthetic*.™

Synslide[®] additive technology, Royal Purple's tough, EP lubricating film, provides maximum protection under boundary lubrication conditions typically caused by heavily loaded, slow speed and / or shock load conditions. This tenacious, slippery film significantly improves lubrication and reduces wear by increasing the oil film thickness and toughness, which helps to prevent metal-to-metal contact in gears and bearings.

Synslide[®] additive technology is noncorrosive to gears and bearings, including case-hardened gears that are easily pitted by conventional sulfur-phosphorus EP oils. Synslide[®] additive technology displaces water from metal surfaces and excels in protecting equipment in wet environments. It also fortifies the oil against the detrimental effects of heat, which causes oil to oxidize.

Note: For Worm Gears, Royal Purple[®] recommends Synergy[®] Worm Gear Oil or Thermyl-Glyde[®] Worm Gear Oil.

Performance Advantages:

- **High Film Strength**
Synergy[®] protects gears and bearings beyond the ability of conventional EP gear oils.
- **Shock Load Protection**
Synergy[®] protects against fatigue failure in gears subjected to sudden shock loads.
- **Rapidly Separates from Water**
Synergy[®] rapidly and completely separates from water, which is easily drained from the bottom of the oil reservoir.
- **Longer Oil Life**
Synergy[®] has outstanding oxidation stability that greatly extends oil change intervals while keeping gear boxes clean.
- **Reduces Bearing Vibrations**
The tough oil film of Synergy[®] coupled with its ability to micro-polish contacting bearing elements provides superior bearing lubrication.
- **Saves Energy**
The tough oil film of Synergy[®] and low coefficient of friction save energy in gear boxes operating under load.
- **Synthetic Solvency**
The natural solvency of Synergy[®] cleans up dirty gear boxes and keeps them clean.
- **Compatible with Seals**
Synergy[®] has excellent compatibility with most seals.
- **Compatible with Other Oils**
Synergy[®] is compatible with most elastomers and can be mixed with other mineral oils and most synthetic oils. (It is not compatible with silicone or glycol based synthetics.)
- **Environmentally Responsible**
Synergy[®] components are TSCA listed and meet EPA, RCRA and OSHA requirements. Synergy[®] extends oil drain intervals, eliminates premature oil changes, decreases the amount of oil purchased and disposed of and conserves energy.

Typical Properties*	ISO Grade								
	68	100	100	150	220	320	460	680	1000
SAE Grade	80W	75W-90	85W	90	90	85W/140, 140	140	140	250
AGMA Grade	2 EP	3 EP	3 EP	4 EP	5 EP	6 EP	7 EP	8 EP	8A EP
Viscosity									
cSt @ 40°C	68	90	100	150	220	320	460	680	1000
cSt @ 100°C	9.5	17.3	12.5	16.6	21.0	27.5	35.0	46.0	59.0
SSU @ 100°F	351	453	518	781	1155	1688	2440	3630	5376
SSU @ 210°F	58	88	70	87	106	136	172	224	286
CP @ -12°C	—	—	4,000	—	—	28,000	—	—	—
CP @ -40°C	—	17,000	—	—	—	—	—	—	—
Viscosity Index	119	210	112	118	113	115	114	115	114
Flash °F	420	425	425	425	445	445	430	450	450
Fire °F	450	455	455	455	475	495	475	485	485
Pour Point °F	-30	-20	-10	-5	0	-5	10	10	15
Specific Gravity @ 60°F	0.8846	0.875	0.884	0.893	0.897	0.897	0.893	0.896	0.901
Corrosion Test									
Copper	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Bronze	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Cincinnati Milacron "B"	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Rust Test									
Fresh Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Salt Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Foam Test									
D-1401 Demulsibility 180°F	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
ASTM 2893 Oxidation									
203°F									
Viscosity % Change	0	0	0	0	0	0	0	0	0
Precip. No. % Change	0	0	0	0	0	0	0	0	0
250°F									
Viscosity % Change	3.2	3.2	3.5	3.5	3.7	3.6	3.8	3.9	3.9
Precip. No. % Change	0	0	0	0	0	0	0	0	0
Timken OK Load, Lbs.	100+	100+	100+	100+	100+	100+	100+	100+	100+
FZG Test	12	12	12	12	12	12	12	12	12
Four Ball EP Test									
Weld Load, kgf	400	400	400	400	400	400	400	400	400
Load Wear Index, kgf	60.2	60.2	60.2	60.4	60.7	60.9	61	61.2	61.2
Falex Coefficient of Friction	.048	.048	.051	.049	.051	.050	.055	.056	.057

*Properties are typical and may vary

*Note: When changing to Synergy®, its solvency cleans wear metals and deposits left behind by previous oils. These wear metals and deposits can cause abnormally high values on used oil analysis until equipment is clean.