PARA-SYN® / PM

Para-Synthetic Paper Machine Oil

ROYAL PURPLE®

Beyond Synthetic™

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Para-Syn® / PM is a premium oil designed to eliminate bearing wear and high temperature deposits that are consistently troublesome to paper machines. Para-Syn® / PM rapidly separates from water, has high filterability and greatly extends oil drain intervals. It is formulated with Royal Purple's proprietary Synerlec® additive technology to provide superior protection against wear and corrosion.

Synerlec® additive technology makes the difference!

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

Synerlec® additive technology forms a tough, slippery, synthetic film on all metal surfaces. This proprietary film significantly improves lubrication: first, by increasing oil film thickness and second, by increasing oil film toughness, both of which help to prevent metal-to-metal contact. It displaces moisture from metal surfaces and protects all metals against rust and corrosion. It also fortifies the oil against the detrimental effects of heat, which causes oil to oxidize.

Performance Advantages:

- **High Film Strength**
  Para-Syn® / PM protects gears and bearings far beyond the ability of other paper machine oils and greatly improves machine reliability.
- **Rapidly Separates from Water**
  Para-Syn® / PM rapidly separates from water and excels in wet operating conditions.
- **Saves Energy**
  Para-Syn® / PM has an extremely low coefficient of friction that is proven to save energy over conventional oils. Energy savings alone can easily exceed the total cost of oil.
- **High Filterability**
  Para-Syn® / PM's additives are not removed by fine filtration systems.
- **Reduces Bearing Vibrations**
  Para-Syn® / PM's tough oil film coupled with its ability to micro-polish contacting bearing elements provides superior bearing lubrication.
- **Longer Oil Life**
  Para-Syn® / PM has outstanding oxidation stability that greatly extends oil change intervals while keeping equipment clean.
- **Protects Equipment**
  The tough oil film of Para-Syn® / PM forms an ionic bond on metal surfaces, which acts as a preservative oil during shutdown and provides instant lubrication upon startup.
- **Environmentally Responsible**
  Para-Syn® / PM components are TSCA listed and meet EPA, RCRA and OSHA requirements. It extends oil drain intervals, eliminates premature oil changes, decreases the amount of oil purchased and disposed of and conserves energy.

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	ISO Grade			
Typical Properties*	100	150	220	320
AGMA Grade	3EP	4EP	5EP	6EP
Viscosity				
cSt @ 40˚C	100	150	220	320
cSt @ 100˚C	10.5	13.7	17.7	22.3
SSU @ 100˚F	524	742	1169	1714
SSU @ 210˚F	62	74	91	112
Viscosity Index	85	85	86	85
Flash ˚F	425	445	475	485
Fire ˚F	495	500	520	520
Pour ˚F	-40	-40	-40	-40
Total Acid No.	0.7	0.7	0.7	0.7
Refractive Index @ 25˚C	1.4895	1.4900	1.4933	1.4947
Foaming, ml.				
Sequence I	0/0	0/0	0/0	0/0
Sequence II	40/0-40sec.	40/0-5sec.	0/0	0/0
Sequence III	0/0	0/0	0/0	0/0
Demulsibility				
40/40/0/10 Test Results	Pass	Pass	Pass	Pass
Copper Corrosion Test				
3 Hours @ 210˚F	1a	1a	1a	1a
250 Hours @ 210˚F	1a	1a	1a	1a
Cincinnati Millicron Corrosion / Thermal Stability Test				
Procedure B, 215˚F				
Copper Rod, 5 max.	1	1	1	1
Steel Rod, 1 max.	1	1	1	1
Viscosity Increase, 5% max.	0.42	0.48	0.57	0.62
Acid No. Increase, 0.2 max.	0.02	0.02	0.035	0.05
Rust Test				
Fresh Water	Pass	Pass	Pass	Pass
Salt Water	Pass	Pass	Pass	Pass
Dry Air Oxidation				
3 Hours @ 203˚F, % Viscosity Increase	0	0	0	0
4-Ball Wear Test				
1800 RPM @ 130˚F, 20 kg. Scar Diam., mm	0.27	0.26	0.26	0.24
4-Ball Weld Test, kg.	315	315	315	315
Timken OK Load, lbs.	60	60	60	60

Other ISO / AGMA grades available upon request. *Properties are typical and may vary