

## Manufacturers of Sulphurised Extreme Pressure Additives

### Light Coloured Sulphur Carriers

We offer a wide range of renewable vegetable oil based light-coloured, low odor sulphur carriers with various sulphur contents and viscosities. Due to their light colour and low odor, these products are used where the highest quality and operator acceptance is required, and can be employed in the production of a wide range of industrial EP lubricants and greases. The range is sold under the trade name EPOIL Additives.

Epoil Products	Sulphur Content %w/w	Active Sulphur %w/w	Viscosity @ 40°C cSt	Colour 5% blend	Copper corrosion 3h @ 100°C (blend)	Load carrying ability 5% blend		Application				
						Weld Load	Wear scar 1h @ 20kg	Metal working	Industrial gear oils	Neat cutting fluids	Greases	Slideway oils
	IP242/83	ASTM D1662	IP71	IP196	IP154	IP239						
<b>Fatty Acid Ester, Triglyceride and Olefin based</b>												
<b>WH115</b>	15 – 16	5	500 – 750	2.0 max	Class 1	320 kg	0.57 mm	*	*	*	*	
<b>WH315</b>	14.5 – 15.5	5	250 – 300	2.0 max	Class 3	280 kg	0.40 mm	*		*		
<b>WH417</b>	16.5 - 17.5	7	150 – 200	2.0 max	Class 4	300 kg	0.56 mm	*		*		
<b>WH417LV</b>	16.5 - 17.5	7	40 – 70	2.0 max	Class 4	300 kg	0.57 mm			*	*	*
<b>WH426</b>	25 – 27	18	550 – 850	2.0 max	Class 4	320 kg	0.67 mm	*		*		
<b>XG201</b>	19 – 20.5	10	300	3.0 max	*Class 1	300 kg	0.70mm				*	
<b>Fatty Acid Ester and Olefin based</b>												
<b>WH110LV</b>	10 - 12	1	22 - 50	2.0 max	Class 1	220 kg	0.59 mm	*		*		
<b>WH116LV</b>	15-17	4	22 – 50	2.0 max	Class 1	240 kg	0.45 mm	*	*	*	*	
<b>WH117LV</b>	17-19	5	50 - 80	2.0 max	Class 1	300 kg	0.59 mm	*		*	*	
<b>WH120LV</b>	19-20	10	70 - 110	2.0 max	Class 1	300 kg	0.62 mm			*	*	*
<b>Triglyceride/ Olefin based</b>												
<b>WH110</b>	9.5 – 10.5	1	200 – 300	2.0 max	Class 1	280 kg	0.32 mm	*	*	*	*	
<b>WH120HV</b>	19 – 20.5	10	1000 - 1500	2.0 max	Class 1	320 kg	0.56 mm	*		*	*	

\*Copper corrosion 24h @ 100°C – 2.5% blend

All of Hornett Bros' light coloured sulphur carriers are vegetable based.



+44 (0) 1708 556041



info@hornett-bros.co.uk



www.hornett-bros.co.uk



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## Manufacturers of Sulphurised Extreme Pressure Additives

### Dark Coloured Sulphur Carriers

We offer an extensive range of traditional, dark coloured sulphur carriers, ideally suited for price sensitive applications. This proven chemistry has been successfully supplied to the lubricant industry for several decades. They are effectively utilised as a component in many metal-working and industrial lubricants. The range is sold under the trade name EPOIL Additives.

EPOil Products	Sulphur Content %w/w	Active Sulphur %w/w	Viscosity @ 100°C cSt	Viscosity @ 40°C cSt	Copper corrosion 3h @ 100°C (blend)	Load carrying ability 5% blend		Application				
						Weld Load	Wear scar 1h @ 20kg	Metal working	Industrial gear oils	Neat cutting fluids	Greases	Slideway oils
	IP242	ASTM D1662	IP71	IP196/ 97	IP154	IP239						
<b>Fatty Acid Ester based</b>												
<b>E18</b>	17.5 – 18.5	6	13 – 18	70	Class 3	240 kg	0.62 mm	*		*		
<b>EA15</b>	14.0 – 15.0	6	15 – 25	34 -45	Class 4	260 kg	0.58 mm	*		*		
<b>Triglyceride based</b>												
<b>3992</b>	9.5 – 10.5	<1	120 – 140	1800	Class 1	380 kg	0.44 mm	*		*		
<b>LO10</b>	9.5 – 10.5	1	64 – 107	1200	Class 2	260 kg	0.50 mm	*		*		
<b>LO11</b>	10.0 – 11.0	3	55 – 70	500	Class 3	260 kg	0.45 mm	*		*		
<b>OL101</b>	8.5 – 10.5	1	30 – 60	450	Class 2B	200 kg	0.42 mm	*	*	*	*	*
<b>ST10</b>	9.5 – 10.2	<1	70 – 100	1200	Class 1	240 kg	0.42 mm	*		*		
<b>Fatty Acid Ester and Olefin based</b>												
<b>S17A</b>	16.0 – 17.0	8	6.5 – 8.0	40	Class 4	260 kg	0.52 mm	*		*		
<b>Fatty Acid Ester and Triglyceride based</b>												
<b>GE11</b>	10.0 – 11.0	1	22	200 – 300	Class 1	280 kg	0.43 mm	*		*	*	*
<b>GS14</b>	13.2 – 14.2	4	13 – 18	120	Class 3	300 kg	0.57 mm	*	*	*		*
<b>GS20</b>	18.5 – 20.0	5	15 – 25	220	Class 3	280 kg	0.60 mm	*		*		
<b>GSB10</b>	9.5 – 10.2	1	14 – 20	135	Class 2	220 kg	0.40 mm	*	*	*	*	*
<b>HS174</b>	16.0 – 18.0	8	50 – 80	450	Class 4	300 kg	0.60 mm	*		*		
<b>Fatty Acid Ester, Olefin and Triglyceride based</b>												
<b>NS10</b>	8.8 – 9.5	<1	25 – 40	300	Class 1	200 kg	0.32 mm	*		*	*	
<b>OL174</b>	16.0 – 18.0	8	50 - 75	750	Class 4	300 kg	0.60 mm	*		*		



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## Manufacturers of Sulphurised Extreme Pressure Additives

### Additive packages

We produce a wide range of complete additive packages formulated to allow customers to produce high-quality lubricants, certified to meet stringent industry specifications in various base oils.

Epoil Product	Viscosity @ 100°C cSt	Flash Point, °C	Density @ 20°C, g/cm <sup>3</sup>	Appearance	Phosphorus, m%	Zinc, m%
<b>Zinc Hydraulic Oil Package – OEM Approval: Denison HFO, HF1, HF2</b>						
<b>HP1056</b>	6.7	140	1016	Clear transparent liquid	4.25	5.00

Epoil Product	Viscosity @ 100°C cSt	Appearance	Flash Point, °C	Density @ 20°C, g/cm <sup>3</sup>	Phosphorus	Sulphur	Zinc
<b>Antiwear Hydraulic Additive Package</b>							
<b>HP6127</b>	14.50	Clear & bright	>220	1.04	5.7	11.3	6.7

Epoil Products	Sulphur content %w/w	Phosphorus content	Viscosity @ 100°C cSt	Viscosity @ 40°C cSt	Copper corrosion 3h @ 100°C 3.5% blend	Acid number 3.5% blend	Load carrying ability 3.5% blend in 100SN			
	IP242	IP245 % w/w	IP71	IP71	IP154	ASTM D974 mgKOH/g	Weld Load	Wear Scar 1h@20kg	Timkin Ok load 2.5% blend	FZG gear test 2.5% blend
<b>Industrial gear oil additive</b>										
<b>SP6010</b>	0.920 – 0.940	0.40 – 0.65	5.00 – 9.00	60	Class 1	17.0 – 23.0	180 kg	0.33 mm	70 LB	Stage 12 pass



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Epoil Products	Sulphur content %w/w	Phosphorus content	Relative density @ 15.6°C	Viscosity @ 40°C cSt	Copper corrosion 3h @ 100°C 1.5% blend	Coefficient of adhesion		Wear scar 1h@20kg	Timkin Ok load
						GG25 – GG25 (steel – steel)	SKC – GG25 (plastic – steel)		
	IP242	IP245 % w/w	ASTM D4052	IP71	IP154	Gleittechnik, f <sub>o</sub>		IP239	IP240
<b>Fully formulated sulphur/ phosphorus slideway additive package</b>									
<b>SP916LX</b>	8.7 – 10.0	1.2 – 1.6	0.950 – 0.970	100 - 160	Class 1	0.19	0.087	0.25mm	60 LB

Epoil Products	Appearance	Density @20°C g/cm <sup>3</sup>	Kinematic Viscosity @ 40°C cSt	Phosphorous % w/w	Nitrogen % w/w	Sulphur % w/w	Flashpoint °C
	Visual	ASTM D4052	ASTM D445	ASTM D4951*	ASTM D5291	ASTM D4951*	ASTM D93
<b>Multifunctional Gear Oil Additive Package for automotive and industrial</b>							
<b>SP3316</b>	Transparent, light-yellow liquid	0.995	8.0	1.6	0.82	33	>80

Epoil Product	Relative density @ 15.6°C	Viscosity @ 100°C cSt	Viscosity @ 40°C cSt	Phosphorus content %w/w	Load carrying ability 1% blend	Application	
					Wear scar 1h @20kg	Hydraulic oils	Cutting/ grinding oils
	IP160	IP71	IP71	IP245	IP239		
<b>Ashless phosphorus friction modifier</b>							
<b>PN14</b>	0.910 – 0.940	11.0 – 17.8	140	1.0 – 1.5	0.25mm	*	
<b>PN192</b>	0.910 – 0.940	11.0 – 17.8	140	1.2 – 1.5	0.25mm	*	*



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#### Lubricity additives

EPoil Products	Relative density @ 15.6°C	Viscosity @ 40°C cSt	Colour neat	Acid number mgKOH/g	Cloud point °C	Load carrying ability 5% blend		Biodegradability %
						Weld load 5% blend	Wear scar 1h@20kg 5% blend	
	ASTM D4052	IP71	IP196	IP139	IP219	IP239		CEC-L-33-T-82
<b>HL</b>	0.870 – 0.890	4.0 min	2.0 max	1	<0	-	0.43 mm	-
<b>L46</b>	0.890 – 0.910	14.0 – 18.0	3.0 max	4.0 max	<5	100 kg	0.40 mm	>90

#### Rust and Corrosion inhibitors

EPoil Products	Viscosity @ 100°C cSt	Colour	Sulphur content	Viscosity @ 40°C cSt	Relative density @ 15.6°C	Load carrying ability	
	ASTM D445-14	ASTM D1500-12	ASTM D4951	ASTM D445-14	ASTM D4052-11	Wear scar <sup>1</sup> , 1 hour/ 20kg	Wear scar <sup>2</sup> , 1 hour/ 20kg
<b>Corrosion Inhibitors</b>							
<b>C130</b>	14.0 -30.0	6.0 max	26.0 – 33.0	1500	0.900 – 1.100	0.35mm	0.42mm



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## Manufacturers of Sulphurised Extreme Pressure Additives

### Miscol Emulsifiers

**Miscol NK** - a complete additive package that can be added directly to distillates, such as kerosene, to give effective industrial emulsifiable solvent cleaners. Miscol NK contains no ethoxylated alkyl phenols. Miscol NK is a pale amber coloured mobile liquid that is readily miscible with petroleum distillates at ambient temperature to give clear stable blends. These blends and their emulsions have little or no corrosive action on copper and remarkably low level of action on ferrous metals.

Relative density @ 15.6°C	Viscosity @ 100°C cSt	Colour (neat)	Total acid number mgKOH/g	Solubility 7% in kerosene
IP160	IP71	ASTM D1500	ASTM D974	HB08
0.900 – 1.000	7.00 – 12.0	4.0 max	20.0 – 35.0	Pass

**Miscol SE** - a complete additive package that can be blended with mineral oils to produce emulsifiable oils of the non-ionic type. Miscol SE is a pale amber-coloured mobile liquid that is readily miscible with mineral oils at ambient temperature to give clear stable blends. Miscol SE is effective in achieving water washable properties in cutting, metal working and quenching oils at a typical treatment rate of 4%. Lubricants treated with Miscol SE can be removed from the workpiece after operation by water washing.

Relative density @ 15.6°C	Viscosity @ 40°C cSt	Colour (neat)	Emulsion stability 10% blend in 100SN	pH of emulsion 10% blend in 100SN	Solubility 10% in 100SN
IP160	IP71	ASTM D1500	HB08 (10% in RO water 16h)	HB08 (10% in RO water 16h)	HB08
0.920 – 0.950	30.0 – 40.0	1.0 max	Pass	5.5 - 7.0	Pass

**Miscol Surface-Bright MX** - a highly concentrated liquid detergent compound containing phosphoric acid and specially selected non-ionic surfactants, used for rust removal and as a metal surface brightener.

Relative density @ 20°C	Appearance	pH (1% in RO water)
1.456 g/cm <sup>3</sup>	Light yellow liquid	1.55

We also offer a full range of chlorinated paraffins and polyalkylene glycols, please contact us for more information.



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