SINCE 1839 Schaeffer MANUFACTURING COMPANY

ISO 9001 CERTIFIED

TECHNICAL DATA

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203C E.P. INDUSTRIAL MACHINE LUBE WITH SOLUBLE MOLY
ISO 32 to ISO 220

203C E.P. Industrial Machine Lube With Soluble Moly is a non-drip, extreme pressure lubricant that is specially formulated for the lubrication of industrial gear units, slide and way systems, bearing applications, gear stamping and machine presses that require a light to medium viscosity extreme pressure gear lube, and other machine tools that require a general purpose extreme pressure oil.

203C E.P. Industrial Machine Lube With Soluble Moly is blended from the finest solvent refined severely hydrofinished, high viscosity index, 100% pure paraffin base stocks available. These 100% pure paraffin base stocks provide 203C E.P. Industrial Machine Lube With Soluble Moly with excellent oxidative and thermal stability and the ability to lubricate over wide temperature ranges.

Blended into these 100% pure paraffin base stocks is a highly specialized non-corrosive thermally stable and thermally durable multi-functional extreme pressure additive package that provides which provides the 203C E.P. Industrial Machine Lube With Soluble Moly with the following performance features:

1. Enhanced thermal and oxidative stability and durability to handle high operating temperatures.
2. Excellent extreme pressure properties to protect gears and bearings from excessive wear and prevent premature bearing fatigue, gear scoring, spalling and pitting.
3. Prevention of the formation of sludge and carbonaceous deposits that can erode seals and cause premature bearing and gear wear.
4. Excellent oil seal compatibility.
5. Excellent protection of components especially yellow metal components from rust and corrosion.
6. Excellent demulsibility characteristics.
7. Enhanced protection of copper, brass and bronze components from corrosion in dry conditions and in the presence of moisture.

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Most gearing is designed to perform under hydro-dynamic lubrication conditions. That is, a full fluid film must separate the metal surfaces of the gears during operation. However, during periods of cold start-up or severe shock loads this film can be destroyed. Unless a boundary lubricant is present in the gear oil when this full fluid is destroyed, wear can take place.

To prevent this wear, Micron Moly®, a liquid soluble type of moly, is further blended into the product. The Micron Moly® provides the boundary lubrication needed by plating to the metal surfaces. This plating action forms a long lasting solid lubricant film on the metal surfaces and gears. This moly film will withstand pressures up to 500,000 pounds per square inch, thus reducing wear and extending equipment life.

The Micron Moly® also provides a smooth finished surface on all moving parts of the gears. This minimizes the action of cold welding, which can occur during start-up after the gears have been standing idle. This in turn lessens starting loads and peak power demand; thus a realistic power cost savings can be achieved.

203C E.P. Industrial Machine Lube With Soluble Moly also contains anti-foam inhibitors, rust and corrosion inhibitors and anti “stick slip” additives.

203C E.P. Industrial Machine Lube With Soluble Moly is recommended in those gearbox applications that employ the use of felt type filters, paper type filters or fine filtration.

203C E.P. Industrial Machine Lube With Soluble Moly meets and exceeds the following specifications and manufacturer requirements: Military Specification MIL-L-6086C, MIL-L-46017, U.S. Steel 224, AGMA 9005-D94, AGMA 9005-E02, AGMA 250.04, David Brown S1.53101 Type E, DIN 51517 Part 3 (CLP), Cincinnati Machine P-47, P-50, P-53, P-63, P-74.

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TYPICAL PROPERTIES

ISO Grade	32	46	68	100	150	220
AGMA Grade	0EP	1EP	2EP	3EP	4EP	5EP
API Gravity 60°F	30.5	30.5	29.5	28	27	28
Specific Gravity 60°F (ASTM D-287)	.8735	.8735	.8780	.8871	.8927	.8871
Viscosity SUS 100°F (ASTM D-445)	142.5-177	236.5-260	332.4-405.8	494.7-567	700-750	1350
Viscosity cSt, 40°C (ASTM D-445)	27.53-34.31	46-50.5	66.00-73.50	95-110	132.7-142.54	198.76-253.7
Viscosity cSt, 100°C (ASTM D-445)	4.9-5.6	7.1-7.5	8.4-9.6	11.00-14.50	15.0-16.5	17.43-19.70
Viscosity Index (ASTM D-2270)	105	105	100	100	95	100
Flash Point °F/°C (ASTM D-92)*	420°/216°	420°/216°	430°/227°	440°/227°	450°/232°	450°/232°
Fire Point °F/°C (ASTM D-92)*	450°/232°	450°/232°	460°/238°	470°/243°	490°/254°	490°/254°
Pour Point °F/°C (ASTM D-97)	-10°/-23.33°	-10°/-23.33°	0°/-17.78°	0°/-17.78°	5°/-15°	10°/-12.22°
Copper Strip Corrosion Test						
3 hours (ASTM D-130)	1a	1a	1a	1a	1a	1a
Rust Test (ASTM D-665)						
Procedure A (Distilled Water)	Pass	Pass	Pass	Pass	Pass	Pass
Procedure B (Salt Water)	Pass	Pass	Pass	Pass	Pass	Pass
Foam Test (ASTM D-892)	Pass	Pass	Pass	Pass	Pass	Pass
Timken E.P. Test (ASTM D-2782)						
OK Load, lbs.	65	65	65	65	65	65
Four Ball E.P. Test (ASTM D-2783)						
Weld Point, kg.	315	315	315	315	315	315
Load Wear Index, kg.	54.4	54.4	54.4	54.4	54.4	54.4
Four Ball Wear Test (ASTM D-2266)						
Scar Diameter, mm.	.35	.35	.35	.30	.28	.28
Oxidation Test (US-S-200)						
%Viscosity Increase @ 121°C/250°F	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
FZG Test (ASTM D-5182 A/8.3/90)	13th Stage	13th Stage	13th Stage	13th Stage	13th Stage	13th Stage
Falex Continuous Load, lbs. (ASTM D-3233)	2000	2000	2000	2500	2500	2500
Demulsibility Test (ASTM D-2711)						
Free Water, ml.	84.5	84.5	84.5	84.5	84.5	84.5
Water in Oil, %	.5	.5	.5	.5	.5	.5
Emulsion	Trace	Trace	Trace	Trace	Trace	Trace

Foam Tendency (ASTM D-89)						
Sequence I, ml.	0/0	0/0	0/0	0/0	0/0	0/0
Sequence II, ml.	0/0	0/0	0/0	0/0	0/0	0/0
Sequence III, ml.	0/0	0/0	0/0	0/0	0/0	

* Flash & Fire Point of Base Oils.