

### FUNCTIONAL WA-30SF

#### Sulfur-Free Multipurpose Circulating/Cutting/Slideway Package

##### APPLICATION:

**FUNCTIONAL WA-30SF** is a highly versatile sulfur-free additive package for preparing a multiuse lubricant that is safe and non-corrosive on a wide variety of metals including copper or 'yellow metal' alloys. Lubricants are low color and non-staining to preserve the surface of work pieces and allow continuous inspection of equipment for wear or corrosion.

**FUNCTIONAL WA-30SF** is suitable for cutting oils, machine tool lubricants, circulating fluids, and light duty hydraulic systems. **FUNCTIONAL WA-30SF** is intended for light duty operations. For severe applications or GM LS-2 service performance use **FUNCTIONAL WA-64**.

##### COMPOSITION:

**FUNCTIONAL WA-30SF** contains a proprietary blend of calcium-based antiwear/EP, corrosion inhibitors, defoamers, and demulsifiers. This product contains no sulfur in any form. 97% of **FUNCTIONAL WA-30SF** components are NSF or 21.CFR incidental food contact listed for excellent user safety.

Typical Properties	
Appearance	Hazy Amber Liquid
Color (ASTM D1500)	≤ 4.0
Odor	Fatty
Specific Gravity	1.0 – 1.02
Lbs. per Gallon	8.4 – 8.5
Flash Point	>110°C / 230°F
Kinematic Viscosity (ASTM D445)	15 – 32 cSt @ 40°C
Elemental Analysis	7.4wt% Ca; 0wt% S / P / Zn / Cl
Biobased Content, wt%	35%

##### TREATMENT LEVEL:

The recommended treatment level of **FUNCTIONAL WA-30SF** is 3.5wt% in a highly refined Group II or III paraffinic oil. See next page for recommended formulations.

##### HANDLING:

Store in a cool, dry area. Review the current Safety Data Sheet before use and use proper protective equipment. **FUNCTIONAL WA-30SF** provides no hazards at recommended treat in a formulation.

This Technical Data Sheet and the Safety Data Sheet contain information believed to be accurate and reliable. No warranty is made, however, to information beyond the control of FUNCTIONAL PRODUCTS INC. The engineering and management personnel of the user are responsible for determining the suitability of this or any product for any specific application, and this information is offered to them for that purpose.

Issued: 2020.12.30

# FUNCTIONAL PRODUCTS INC.

Innovative Chemistry for Lubricants




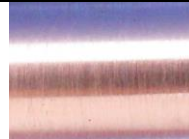
## Technical Data Sheet

### COMPETITIVE PERFORMANCE:

**FUNCTIONAL WA-30SF** was tested in a trial formulation containing 3.5wt% **FUNCTIONAL WA-30SF** package and 0.1wt% **FUNCTIONAL V-178** tackifier in HCC 150 rerefined Group II paraffinic oil.

#### Performance vs. Commercial Competitor "MM426"

Test	Competitor "MM426"	WA-30SF Trial Formula
ISO Viscosity Grade	32	32
Tackiness, FPI Ductless Siphon string length	6 DS	8 DS
4-ball Wear, ASTM D4172, 15kg – Wear Scar Dia. / C of F	0.27 mm / 0.0613	0.26 mm / 0.0598
4-ball Wear, ASTM D4172, 40kg – Wear Scar Dia. / C of F	0.60 mm / 0.0975	0.34 mm / 0.0714
4-ball EP Weld Load, ASTM D2783 mod. (one AISI steel top ball on three H62 brass bottom balls)		
Wear Scar Diameter@ 100 kgf load	0.69 mm	0.77 mm
Wear Scar Diameter @ 200 kgf load	1.02 mm	1.01 mm
Wear Scar Diameter @ 250 kgf load	1.13 mm	1.11 mm
Wear Scar Diameter @ 315 kgf load	1.21 mm	1.19 mm
Wear Scar Diameter @ 400 kgf load	1.64 mm	1.75 mm
Demulsibility, ASTM D1401 – Oil/Water/Emuls (Min)	41/38/0 (15)	42/39/0 (15)
Foaming, ASTM D892 Sch. I – Tendency/Stability in mL	60/0	0/0
RPVOT Oxidative Stability, ASTM D2722	134 minutes	170 minutes
Copper Strip Corrosion, ASTM D130 – 3 hours	1b	1b
Copper Strip Corrosion, ASTM D130 – 24 hours	2c (silver)	1b (orange)
Turbine Oil Rust, ASTM D665A – Distilled Water	Fail	Pass
Turbine Oil Rust, ASTM D665B – Brine	Fail	Pass

	Competitor "MM426"	WA-30SF Trial Formula
ASTM D665A rust with distilled water result		
ASTM D665B rust with brine result		

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