

### FUNCTIONAL HF-580

#### Biodegradable Hydraulic Fluid Additive Package

##### APPLICATION:

**FUNCTIONAL HF-580** is a light color, low odor additive package used to formulate antiwear hydraulic fluids using biodegradable esters or vegetable oils. **FUNCTIONAL HF-580** does not contain zinc or heavy metals, provides oxidation/corrosion protection, extreme-pressure/anti-wear activity and demulsibility. **FUNCTIONAL HF-580** is highly compatible in other base oils such as saturated esters, PAOs and Groups I – III petroleum base oils. **FUNCTIONAL HF-580**, when fully formulated to ISO 46 grade in high oleic canola oil, demonstrates excellent performance in a Vickers 104C vane pump test. **FUNCTIONAL HF-580** at 2.5% treat in high oleic canola oil gave 100 minutes in the RPVOT oxidation test.

##### COMPOSITION:

**FUNCTIONAL HF-580** is a mixture of oxidation, wear, ferrous and non-ferrous corrosion inhibitors and demulsifiers designed to give optimum performance in biodegradable esters and vegetable oils.

Typical Properties	
Appearance	Clear to slightly hazy
Odor	Mild
Color, ASTM D1500	2.0
Lbs per Gallon	8.2
Flash Point, COC	> 232°C (> 450°F)
Kinematic Viscosity, ASTM D445	50 cSt at 40°C
Vane Pump Test, Total mg wt loss*	24.5 (Pass)

\*ISO 46 grade fully formulated in high oleic Canola oil. Eaton Vickers V104C ASTM D7043 (2000 psi, 66°C, 100 hrs).

##### TREAT LEVEL:

Use **FUNCTIONAL HF-580** at 2.5% by weight in a suitable biodegradable base stock. 0.5 – 1.0% **FUNCTIONAL PD-585** may be added for low temperature stability and to produce a biodegradable ISO 32 hydraulic fluid. For ISO 46 fluid approximately 2.5% **FUNCTIONAL PD-585** is required. Additional demulsifier may be required in certain base oils which must be determined by the end user.

##### HANDLING:

Use normal safe procedures for handling and blending **FUNCTIONAL HF-580**. Heating before blending is not required but temperatures up to 60°C (140°F) may be used to reduce blending time. Review the current Safety Data Sheet before use.

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.

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