

# FUNCTIONAL PRODUCTS INC.

Innovative Chemistry for Lubricants

## Technical Data Sheet

### FUNCTIONAL RD-540

Multifunctional Rock Drilling Additive Package  
for biodegradable base oils

#### APPLICATION:

**FUNCTIONAL RD-540** is a high performance oil additive package containing EP/Antiwear, corrosion inhibition, and water emulsification properties especially suited for rock drilling applications. Lubricants made from **FUNCTIONAL RD-540** are readily biodegradable when formulated with natural triglyceride base stocks, and is designed to meet the requirements of pneumatic tools, down-hole and surface drilling equipment. A tackifier/viscosity modifier such as Functional V-515 should be used with a triglyceride base oil to build the viscosity to the desired ISO grade and to allow the lubricant to adhere to tooling surfaces further reducing corrosion and wear in the presence of compressed air. **FUNCTIONAL RD-540** is compatible with triglyceride oils, synthetic esters, and groups I-III petroleum base stocks.

The D1401 demulsibility test gives 73 ml of emulsion after 30 minutes.

If water demulsification is required then use **Functional RD-540CP**.

#### COMPOSITION:

**FUNCTIONAL RD-540** is a proprietary formulation recommended for triglyceride oil base stocks.

Typical Properties	
Appearance	Amber liquid
Odor	mild
Lbs per Gallon	8.26
Flash Point (COC)	150°C
Kinematic Viscosity at 100 °C	30.8. cst
Copper strip corrosion D130	1b
Sulfur	16.1 % by wt.
Phosphorous	0.78 % by wt.
Solubility in oil/water	soluble/insoluble

Test Results – 2.2 wt% in ISO 100 thickened triglyceride oil	
Kinematic Viscosity at 100 °C D445	94.4 cSt
Kinematic Viscosity at 40 °C D445	20.9 cSt
Viscosity Index (VI)	249
4-Ball Wear Scar (D4172, 20 kg)	0.30 mm
4-Ball Weld Load (D2783)	315 kg
• Load wear Index (LWI)	65
Timken OK Load	> 60 lbs
Demulsification, D1401, 30 min	1/6/73
FZG A/8.3/90 (D5182), Load stage	> 12

#### TREATMENT LEVEL:

**FUNCTIONAL RD-540** recommended initial treat level is 2.2% weight. The optimum treat level will depend on the base oil type, viscosity, and severity of the application.

#### HANDLING:

**FUNCTIONAL RD-540** is a skin and eye irritant, and should be handled with suitable personal protection preferably in a well-ventilated area. The maximum heating temperature is 140° F. At higher temperatures, fumes could be released which could be an inhalation irritant.

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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