

### FUNCTIONAL MB-1005

#### Shear Stable Polymethacrylate Base Stock

#### APPLICATION:

**FUNCTIONAL MB-1005** is a liquid-form polymethacrylate base stock for the most demanding applications under high flow rates, pressure, and cavitation in applications like transmission fluids, electric vehicle fluids, light gear oils, and hydraulics. **FUNCTIONAL MB-1005** is capable of producing exceptionally shear stable finished lubricants.

For a more economical option, try **FUNCTIONAL V-736** 600 cSt ethylene-propylene oligomer (6 SSI by KRL) if the added dispersancy, viscosity index boost, and additive compatibility are not required.

#### COMPOSITION:

**FUNCTIONAL MB-1005** is a polyalkylmethacrylate oligomer with a small amount of petroleum oil.

Typical Properties	
Lbs per Gallon (ASTM D 1475)	7.80
Specific Gravity	0.91
Kinematic Viscosity (ASTM D 445) @ 40°C	2700 cSt @ 40°C
Kinematic Viscosity (ASTM D 445) @ 100°C	170 cSt @ 100°C
Thickening Efficiency, 10wt% in ISO 32 Group I	7.0 cSt @ 100°C
Shear Stability Index (PSSI), ASTM D6278, 25% in oil	0%
20hr KRL Shear Stability, CEC L-45-A-99, 25% in oil	10%
Flash Point (ASTM D 92)	>125°C
Color (ASTM D 1500)	< 2.0

#### TREATMENT LEVEL:

Typical treatment level ranges from 15 to 40% for hydraulic fluids, gear oils, and transmission fluids.

Please see the next page for examples treat rates and viscosities.

#### HANDLING:

**FUNCTIONAL MB-1005** can be warmed to about 50°C (120°F) to facilitate pumping and handling. Mixing time will vary with equipment but is typically at least one hour. Safe handling precautions are the same as those to be taken with base oil; see the current Safety Data Sheet.

### Suggested\* Treat Levels for FUNCTIONAL MB-1005:

FUNCTIONAL MB-1005 treat rates for hydraulic fluid and gear oils in 4 cSt Group III oil:

ISO VG or SAE Gear	ISO 32	ISO 46	ISO 68	SAE 90
wt% MB-1005	14.1%	23.6%	33.2%	38.4%
Viscosity @ 40°C, cSt	31.96	46.0	68.11	85.78
Viscosity @ 100°C, cSt	6.60	8.88	12.13	14.5
Viscosity Index	168	177	177	177

FUNCTIONAL MB-1005 treat rates for 4.5 – 7.5 cSt Automatic Transmission Fluids (ATF):

Viscoisty @ 100C =	4.5 cSt "ULV"	6.0 cSt "LV"	7.5 cSt "Dex III"
60N Group II+	15.4%	23.0%	28.9%
3 cSt Group III	11.4%	19.8%	26.3%
2 cSt PAO	22.3%	30.2%	36.3%

FUNCTIONAL MB-1005 treat rates for full synthetic 75W-90 automotive gear oil:

	75W-90
FUNCTIONAL MB-1005	34.3%
FUNCTIONAL GA-614	4.0%
PAO 6	61.7%
Viscosity @ 100C (ASTM D445)	15.9
Viscosity Index (ASTM D2270)	169
Brookfield Viscosity @ -40C, cP (ASTM D2983)	≤ 150,000

\* These treat levels are approximates. Exact treat levels will require experimentation in a full formulation and will vary due to base oil and other additive packages (anti-wear, EP, corrosion inhibitors, AO, pour point depressants, etc.).

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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