

### FUNCTIONAL MD-2200

Dispersant Methacrylate-based Viscosity Index Improver for Engine, Gear, and Modern ATF

#### APPLICATION:

**FUNCTIONAL MD-2200** is a liquid-form dispersant polyalkylmethacrylate viscosity modifier that offers high thickening efficiency and dispersancy for heavy duty formulations. **FUNCTIONAL MD-2200** is ideal for modern automatic transmission fluids (ATF) and extended life engine oil, heavy duty diesel, and racing engines which require added dispersancy and shear stability in the viscosity modifier. **FUNCTIONAL MD-2200** has been specifically formulated to provide additional VI improvement, demulsibility, and dispersancy.

#### COMPOSITION:

**FUNCTIONAL MD-2200** is a functionalized polyalkylmethacrylate blend in highly refined mineral oil.

Typical Properties	
Lbs per Gallon (ASTM D1475)	7.6
Specific Gravity	0.91
Typical Viscosity (ASTM D445)	550 cSt at 100°C
Thickening Efficiency (10% in ISO 32)	9.0 cSt at 100 °C
Treat Level (ISO 46 from 150N Group II)	8.9wt%
PSSI (5% in 150N, ASTM D6278)	3%
20hr KRL Shear Stability (CEC L-45-99-A)	35%
Flash Point (ASTM D92)	>150°C
Color (ASTM D1500)	1.5

#### TREATMENT LEVEL:

7 - 12wt% **FUNCTIONAL MD-2200** is sufficient to prepare 6.0 – 7.5 cSt ATF in a 4 cSt base oil. 7 - 25wt% **FUNCTIONAL MD-2200** is used in 6 cSt oil to prepare highly dispersant engine oils or HVLDP hydraulic fluids (DIN 51524).

	Treat Rate in 6 cSt Gr. II			Treat Rate in 4 cSt Gr. III			ATF Viscosity	Typical wt% in 4 cSt Oil
	KV40	KV100	VI	KV40	KV100	VI		
0wt%	42.3	6.49	103	19.6	4.23	122	6.0 cSt	7.0%
5wt%	51.3	8.45	140	23.2	5.46	185	6.5 cSt	8.8%
10wt%	63.8	10.62	157	29.7	6.87	203	7.0 cSt	10.4%
15wt%	80.7	12.90	160	36.9	8.26	209	7.5 cSt	12.0%

#### HANDLING:

**FUNCTIONAL MD-2200** should be warmed to about 50°C (120°F) to facilitate pumping and handling. The base oil should be heated to 60-80°C (140-180°F) during blending to allow for good mixing. 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.