

FUNCTIONAL V-731

1100 cSt Ethylene Propylene Oligomer Base Stock

APPLICATION:

FUNCTIONAL V-731 is a pure liquid viscosity modifier with high thickening efficiency and low temperature fluidity for high performance at lower cost per treat. The exceptional shear stability of **FUNCTIONAL V-731** allows it to act as a high viscosity synthetic base stock.

COMPOSITION:

FUNCTIONAL V-731 is pure low molecular weight copolymer of ethylene and propylene with no diluent.

Typical Properties	
Appearance	Clear Colorless Liquid
Kinematic Viscosity, ASTM D445	1,100 cSt @ 100°C 18,900 cSt @ 40°C
Viscosity Index	270
Density (lb/gal)	7.13 lb/gal
Specific Gravity @ 60°F	0.85 g/mL
Flashpoint, ASTM D92 COC	>270°C (518°F)
Pour Point, ASTM D97	-3°C / 26.6°F
Thickening Efficiency (10wt% in ISO 32 Gr. I)	11.5 cSt @ 100°C
Thickening Efficiency (10wt% in Canola)	15.3 cSt @ 100°C
Shear Stability Index (PSSI), ASTM D6278 (5wt% in PAO4)	0 SSI
20hr KRL Shear Stability, CEC L-45-A-99 (5wt% in PAO4)	8%

TREATMENT LEVEL:

FUNCTIONAL V-731 is compatible in petroleum oils (Group I-III and naphthenic), PAO, vegetable oils, and some polyol esters, diesters, and estolides. **FUNCTIONAL V-731** is incompatible in all PAG fluids. See next page for Formulation Guide.

Treatment levels of 2 – 30% are typical in industrial lubricants and greases. **FUNCTIONAL V-731** can be used as either a VI improver or a shear stable base stock depending on the need.

HANDLING:

Dissolving is best accomplished with continuous agitation at temperatures of 104-140°F (40-60°C). **FUNCTIONAL V-731** may be preheated in a hot room or tank at up to 176°F (80°C) to aid in pumping but long term storage should remain below 140°F (60°C).

FUNCTIONAL V-731 is a non-hazardous material; see the current Safety Data Sheet.

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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Innovative Chemistry for Lubricants

Technical Data Sheet

FORMULATION GUIDE:

FUNCTIONAL V-731 formulations shown with Functional Products Inc. pour point depressants. Contact Functional for custom design and formulation using your oils, additives, and packages.

Group III GL-5 Automotive Gear Oils: XW-90

4 cSt Group III	76
FUNCTIONAL V-731 (thickener)	16
Gear Package	7.5
FUNCTIONAL PD-630 (PPD)	0.5

KV100, cSt	16.3
KV100 at 20hr KRL, cSt	15.3
20hr KRL Viscosity Loss	6%
D2983 BF @ -40°C, cP	53,400

Group IV GL-5 Automotive Gear Oils: XW-90

4 cSt Group IV	73.5
FUNCTIONAL V-731 (thickener)	16.5
Gear Package	10

KV100, cSt	15.4
KV100 at 20hr KRL, cSt	14.5
20hr KRL Viscosity Loss	5.9%
D2983 BF @ -40°C, cP	83,800

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