

FUNCTIONAL V-739

HIGH VISCOSITY BRIGHT STOCK AND POLYBUTENE REPLACEMENT

APPLICATION:

FUNCTIONAL V-739 is a pure liquid viscosity modifier with extremely high thickening efficiency, excellent shear stability, and low temperature fluidity intended to replace or reduce bright stock, polybutenes, and polymethacrylates for improved formula economy in lubricants. **FUNCTIONAL V-739** is suitable for high viscosity base fluids for heavy-duty industrial lubricants like open gear lube without using asphalts or other resins.

FUNCTIONAL V-739 is NSF HX-1 registered.

COMPOSITION:

FUNCTIONAL V-739 is a high viscosity olefin copolymer with no diluent.

Typical Properties	
Appearance, Visual	Clear to Slight Haze Slight Yellow to Orange
Color, ASTM D1500	2.0
Density (lb/gal), ASTM D1475	7.1
Kinematic Viscosity @ 100°C, ASTM D445	>1,000,000 cSt @ 40°C 62,000 cSt @ 100°C
Flash Point, ASTM D92 COC	>250°C (518°F)
Thickening Efficiency, 10wt% in ISO 32 Group I	30.4 cSt @ 100°C
Shear Stability Index (PSSI), ASTM D6278	< 3 SSI
20hr KRL Shear Stability, CEC L-45-A-99	45 SSI

TREATMENT LEVEL:

Treatment levels of 1 – 10% are typical in industrial lubricants and greases. **FUNCTIONAL V-739** is compatible in most Group I-III paraffinic oils, naphthenic oils, and some low viscosity PAO.

HANDLING:

Dissolving is best accomplished with continuous agitation at temperatures of 104-212°F (40-100°C). **FUNCTIONAL V-739** 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-739 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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FUNCTIONAL PRODUCTS INC.

Innovative Chemistry for Lubricants

Technical Data Sheet

Suggested* Treat Levels for FUNCTIONAL V-739:

Comparison of FUNCTIONAL V-739 versus High Viscosity Polybutene in 4 cSt Group III

ISO VG	22	32	46	68	100	150
wt% V-739	0.0%	2.3%	4.0%	5.9%	7.8%	9.7%
Viscosity @ 40°C, cSt	22.0	32.0	46.0	68.0	100.0	150.0
Viscosity @ 100°C, cSt	4.54	6.74	9.38	13.16	18.1	24.82
Viscosity Index	122	176	193	199	201	200
wt% Polybutene	0.0%	6.0%	10.5%	15.5%	20.5%	26.0%
Viscosity @ 40°C, cSt	22.0	32.0	46.0	68.0	100.0	150.0
Viscosity @ 100°C, cSt	4.54	6.08	7.96	10.62	14.16	19.06
Viscosity Index	122	140	145	145	145	145

Polybutene = PB 2400, PB 128, or equivalent

Treat Rates for Heavy-Duty Industrial Lubricants, Greases, and Open Gear Lubes using 600N Group II and L-750 Naphthenic Oil:

ISO VG	wt% V-739 in 600N Group II	Viscosity @ 100C	Viscosity Index	wt% V-739 in L-750 Naphthenic	Viscosity @ 100C	Viscosity Index
220	3.7%	23.4	132	2.0	16.1	68
320	5.8%	32.2	141	3.7	22.3	86
460	8.0%	43.8	149	5.5	30.9	98
680	10.3%	61.5	159	7.6	44.1	110
1000	12.9%	85.9	169	9.7	62.4	122
5000	24.6%	342	219	20.5	230.2	169
10000	30.6%	707	266	26.0	345.1	185
20000	37.2%	1630	334	31.9	441.4	192
30000	41.3%	2830	385	35.6	464.6	191

* 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.).



Nonfood Compounds
Program Listed HX-1, HX-2
Registration No. 172885

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