

Application Note: FUNCTIONAL V-736 EPO versus Metallocene PAO (mPAO)

FUNCTIONAL V-736 (600 cSt) ethylene-propylene oligomer is a high viscosity synthetic base stock competitive with mPAO technology for producing full synthetic automotive and industrial gear oils, hydraulic fluids, and general-purpose lubricants. Either technology provides high shear stability in the industry standard CEC L-45-A-99 “20 hour KRL test” with an SSI of less than 5% loss in the test.

FUNCTIONAL V-736 is NSF HX-1 listed making it an excellent option for high temperature, high performance lubricant and grease formulation demands.

High Viscosity Base Stock Comparison	mPAO 300	mPAO 150	mPAO 100	FUNCTIONAL V-736
High Viscosity Base Stock Properties				
Chemistry	mPAO	mPAO	mPAO	EPO
Monomers	Alpha Olefin	Alpha Olefin	Alpha Olefin	Ethylene, Propylene
API Base Oil Group	IV	IV	IV	V
Kinematic Viscosity, 40°C (ASTM D445)	3360	1650	1240	9000
Kinematic Viscosity, 100°C (ASTM D445)	300	150	100	550
NSF HX-1 Indirect Food Contact	Yes	Yes	Yes	Yes
"Synthetic base stock" claim	Yes	Yes	Yes	Yes
Treat Rate for ISO 220 in PAO 6				
wt% High Viscosity Base Stock	45%	53%	60%	28%
wt% PAO 6	55%	47%	40%	72%
Properties of ISO 220 Blend				
ISO VG	220	220	220	220
Kinematic Viscosity, 40°C (ASTM D445)	227.1	218.4	214.5	219.1
Kinematic Viscosity, 100°C (ASTM D445)	32.9	30.5	29.3	29.9
Viscosity Index (ASTM D2270)	161	182	177	177
Density - lb/gallon	7.05	7.04	7.04	7.00
Density- kg/liter	0.845	0.844	0.844	0.839
Flash Point (ASTM D92) °F	478	482	492	476
Flash Point (ASTM D92) °C	248	250	256	247
Pour Point (ASTM D97) °C	-57	-57	-57	-57