

FUNCTIONAL V-158FN

LOW TEMPERATURE VISCOSITY INDEX IMPROVER

APPLICATION:

FUNCTIONAL V-158FN is a naphthenic oil-based viscosity index (V.I.) improver that may be used in preparing high viscosity oils for low temperature operation including: wireline, refrigerant, drilling, and industrial gear oils. **FUNCTIONAL V-158FN** may be used as low temperature wireline grease base up to ISO 10,000.

COMPOSITION:

FUNCTIONAL V-158FN is a copolymer of ethylene and propylene in a light naphthenic oil.

Typical Properties	
Specific Gravity	0.88 – 0.89
Lbs per Gallon	7.35 – 7.40
Flash Point	>100°C (212°F)
Kinematic Viscosity	1200-1600 cSt at 100°C 17,000 cSt at 40°C
Thickening Efficiency (10wt% in ISO 32 Gr. I)	11.7 cSt @ 100°C
Color	Orange (< 4.0 ASTM)

TREATMENT LEVEL:

Treatment levels from 5 - 20% are typical in industrial lubricants and greases.

See next page for treat rates from ISO 68 to ISO 10,000 in an ISO 22 naphthenic oil.

HANDLING:

Due to the viscosity of **FUNCTIONAL V-158FN**, elevated temperature (up to approximately 90°C or 200°F) can facilitate handling. Safe handling precautions are the same as those to be taken with the base oil; 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

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Starting points for ISO 68 – 10,000 in ISO 22 naphthenic oil*

ISO VG	Treat Level* (wt%)	Viscosity Index* (ASTM D2270)	Pour Point* (ASTM D97)
68	12%	146	-48°C / -54°F
220	25%	171	-48°C / -54°F
460	33%	182	-45°C / -49°F
680	40%	196	-42°C / -44°F
1,000	46%	201	-39°C / -38°F
1,500	50%	203	-36°C / -33°F
5,000	75%	291	-27°C / -17°F
7,500	80%	294	-24°C / -11°F
10,000	90%	322	-24°C / -11°F

ISO 22 naphthenic oil is VI 53 and p.p. -33°C / -30°F.

0.1-0.5wt% Functional PD-620 and/or 1-2% TMP or adipate ester will reduce the effect of additive packages on viscosity index and pour point.

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