CHEMAX
Chemical Co., Ltd.
科迈化学工业有限公司
"Innovating Chemicals, Empowering Industries"

Product Data Sheet

Viscor 22

PRODUCT DESCRIPTION

Viscor 22 is a solid amorphous olefin copolymer specifically engineered to function as a Viscosity Index Improver (VII) in engine oil formulations. It delivers outstanding shear stability and enhances low-temperature performance, making it ideal for use in both passenger car motor oils (PCMO) and heavy-duty engine oils (HDEO). Its molecular design ensures consistent performance across a broad temperature range, improving lubricant efficiency and durability.

FEATURES & BENEFITS

- Exceptional shear stability and low-temperature performance.
- Rapid solubility in a variety of base oils.
- Enhanced pour point properties when combined with suitable pour point depressants.
- Broad base oil compatibility — optimally suited for SN150, SN130, and SN100.

RECOMMENDED DOSAGE (WT%)

Viscor 22 may dissolved in a wide range of base oil at 12.0% wt to produce a liquid Viscosity Index Improver.
This chart displays the typical treat rates for the additive:

SAE J300 Viscosity Grade Liquid Viscor 22 treat % wt	
10W 40	10.5 – 11.5
15W 40	8.5 – 9.5
20W 40	6.0- 8.1

APPLICATIONS

- Passenger Car Motor Oils (PCMO)
- Heavy-Duty Diesel Engine Oils (HDEO)
- Multigrade Engine Oil Formulations

TYPICAL CHARACTERISTICS

Item	Specification
From	Solid Polymer
Appearance	Clear Polymer
Density 15°C, g / ml	0.875
Melt flow index g / 10	7.4 max
Propylene Content	% wt: 50 max
Mooney Viscosity ML (1+4) 100 °C	8-13
Ethylene Content %wt	48.1-53.1
ENB (DCPD)	Nil
Molecular Weight Distribution	Narrow
Volatility %S	1.2
Vanadium Content mg/kg %≤	10
Ash content %S	0.1
SSI(Kurt Orban)	25

Thickening Power @100 ◦C = 5.5 - 6.6cSt

Solubilization Process for Viscor 22

1. Preheat and Preload

Charge 80–85% of the total base oil to the dissolving tank and preheat to 110–120°C before polymer addition. This reduces the ramp-up time to the dissolution temperature.

2. Mixer and Nitrogen Setup

Ensure the mixer impeller is submerged. Begin mixing and nitrogen purge as soon as oil covers the impeller to prevent oxidation.

3. Additives Addition
Add oxidation inhibitor (BHT) immediately after mixing begins to ensure uniform dispersion.

4. Ramp-up Temperature & Polymer Addition
Simultaneously heat the oil to 140–145°C and begin continuous feeding of chopped polymer in small, timed increments. Avoid polymer clumping by ensuring dispersion rate matches mixing capacity.

5. Controlled Dissolution Phase
Once all polymer is added, maintain temperature at 140°C, increase agitation speed slightly (if safe) to enhance mass transfer, and hold for 3.5–4.5 hours, reducing the dissolution phase duration.

6. In-process Viscosity Monitoring
Use inline viscosity monitoring, if available, or take samples hourly to track polymer dissolution progress. This avoids over-processing.

7. Final Viscosity Adjustment
Once dissolved, adjust to target viscosity using the remaining 15–20% of base oil. Mix thoroughly for 30–45 minutes (down from 30–60 minutes) and confirm homogeneity.

8. Final Filtration and Transfer
Transfer the finished product to the storage tank through a cartridge filter (25 micron). Use pre-warmed transfer lines to avoid polymer precipitation or gel formation.

Properties of 12.0% wt, Viscor 22 dissolved in Exxon Mobil 150 N AP/E

Color ASTM D 1500 :	1.1
Density 15°C: g / ml :	0.87
Flash point ◦C (PMCC) :	236
Kint Visc100°Cmm2/s :	1,092 cSt
SSI 1 (Bosch) ASTM D 6278 :	23.6
Thickening power :	1 at 100°C / cSt 6.44

Handling Information

Max dissolving Temp: 150◦C with nitrogen blanketing shelf life: 36 months.

SAE 20W – 50 Demonstration Oil

Composition	**Function**	**% wt**
Viscor 22	VI Polymer	8.1
HITEC 9325 G	Additive Pack	6.8
Exxon Mobil 150 N	Base Oil	20
Exxon Mobil 600 N	Base Oil	65
HITEC 672	PPD	0.1
Properties	J 300 Specification	
Kinetic Viscosity at 100°C	16.3 – 21.9	18.25
CCS at -15°C	9500 Max	8420
MRV TP –1 at - 20°C	60,000 Max	32,641

SAE 15W-40 Demonstration Oil

Composition	**Function**	**% wt**
Viscor 22	VI Polymer	8.2
HITEC 9325 G	Additive Pack	6.8
Exxon Mobil 150 N	Base Oil	52.8
Exxon Mobil 600 N	Base Oil	32.1
HITEC 672	PPD	0.1
Properties	**J 300 Specification**	
Kinetic Viscosity at 100°C	12.3-16.3	14.24
CCS at - 20°C	7000 Max	6242

SAE 20W-40 Demonstration Oil

Composition	**Function**	**% wt**
Viscor 22	VI Polymer	6.1
HITEC 9325 G	Additive Pack	6.8
Exxon Mobil 150 N	Base Oil	14.8
Exxon Mobil 600 N	Base Oil	72.2
HITEC 672	PPD	0.1
Properties	**J 300 Specification**	
Kinetic Viscosity at 100°C	12.3-16.3	14.45
CCS at - 15°C	9500 Max	8280
MRV TP-1 at -20°C	60,000 Max	32,641

SAE 10W40 Demonstration Oil

Composition	**Function**	**% wt**
Viscor 22	VI Polymer	10.1
HITEC 9325 G	Additive Pack	6.8
Exxon Mobil 150 N	Base Oil	41.5
Nexx Base 3043	Base Oil	41.5
HITEC 672	PPD	0.1
Properties	**J 300 Specification**	
Kinetic Viscosity at 100°C	12.3-16.3	14.28

SAE 5W30 Demonstration Oil

Composition	**Function**	**% wt**
Viscor 22	VI Polymer	9.2
HITEC 9325 G	Additive Pack	6.8
Nexx Base 3043	Base Oil	83.9
HITEC 672	PPD	0.1
Properties	**J 300 Specification**	
Kinetic Viscosity at 100°C	9.3-12.3	10.24
CCS at -30°C	6600 Max	5824
MRV TP – 1 at -35°C	60,000 Max	36,840

PACKING, STORAGE & TRANSPORTATION

This product is classified as non-flammable, non-explosive, and non-corrosive. When storing, handling, transporting, or using this product please refer to the SH/T 0164 standard and the product's Material Safety Data Sheet (MSDS) for proper guidelines.
Maximum storage temperature: Do not exceed 75°C.
Recommended long-term storage temperature: Should not exceed 45°C.
For detailed information on safety, health, and environmental precautions, please consult the MSDS.

PACKAGING OPTIONS

Available in bulk and drums.