



A Subsidiary of PETRONAS Chemicals Group

# PRODUCT DATA SHEET

## Viscotech<sup>®</sup> 535L

Multi-Purpose, Liquid Styrenic Viscosity  
Modifier

**BRB Lube oil Additives & Chemicals**

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## Viscotech® 535L

### Product Description



Viscotech® 535L is a highly shear-stable liquid viscosity modifier (3 SSI), whose solid, star-shaped styrenic polymer is dissolved in a Group III base oil. This high-quality product is designed for use in multi-grade oil formulations, meeting the demanding performance & specification requirements of modern diesel/gasoline engine oils. This VM is also suitable for the next-generation engines, characterised by low-viscosity grades, e.g., 0W-XX.

Viscotech® 535L is a unique styrenic viscosity modifier offering in the market, because aside from its automotive suitability, it simultaneously acts as a PMA-alternative for selected hydraulic oil viscosity grades. Viscotech® 535L's star-shaped architecture allows it to address several key needs of this application, different from those of vehicles.

### Benefits

- Meets the stringent demands arising from the continuously lowering viscosity grades (5W-XX & even 0W-XX).
- Proven, excellent permanent shear stability in both automotive & hydraulic applications thanks to its structure.
- Better filterability & less degradation/pollution, thus extending the hydraulic oil's life.
- Demonstrates a broad thermal coverage, i.e.: outstanding low-temperature performance (automotive) & optimal contribution to high-temperature viscosity under more severe operating conditions (hydraulic).
- Significant cost savings due to its:
  - Individual application efficiencies, competitive treat rates & cheaper materials (vs 35 SSI PMAs in VG 32 & 46 hydraulic oil formulations).
  - Multi-purpose capabilities (same SSI) in said VGs, contributing to economies of scale due to lower operational costs, one product source for all & no additional tank requirements.

### Performance

Good to understand:

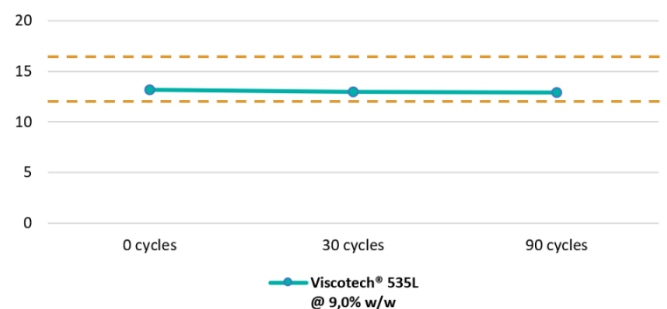


High shear stability → Extended drain interval

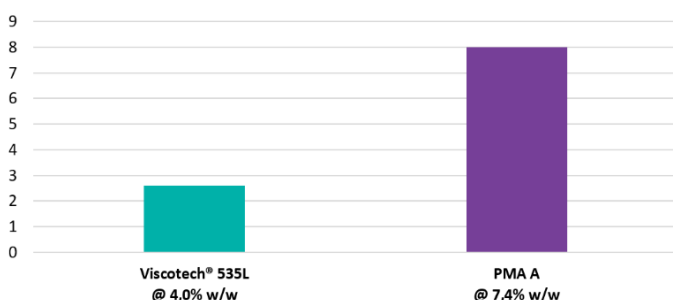


Less viscosity loss (%) → More efficient VM

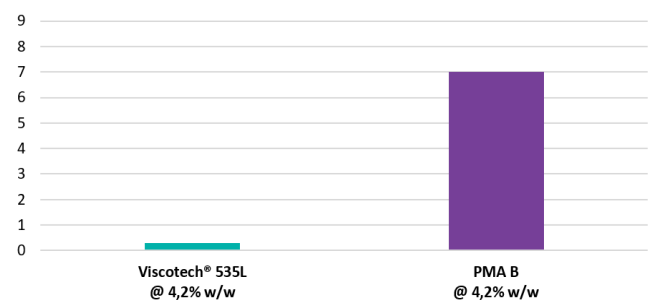
Shear Stability Performance (cSt) in 5W-40 Automotive Blend, KV @ 100 °C, Bosch 90 Cycles (ASTM D7109)



Viscosity Loss (%) In ISO VG 46 Hydraulic Formulation, KV @ 100 °C, Bosch 250 Cycles (ASTM D6278)



Viscosity Loss (%) In ISO VG 46 Hydraulic Formulation, KV @ 100 °C, Bosch 250 Cycles (ASTM D6278)



Note: Our product's performance as per the KRL Tapered Roller Bearing Test @ 20h (CEC L45-A-99) is available upon request.

Issue Date: November 2022

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### Typical Data

Parameter	Unit	Method	Typical
Appearance	-	Visual	Clear colourless to yellow viscous liquid
Density @ 15 °C	(g/cm <sup>3</sup> )	ASTM D4052	0,837
Kinematic viscosity @ 100 °C	cSt	ASTM D445	1200
Kinematic viscosity @ 100 °C, diluted @ 10 % w/w in GR III (5 cSt)	cSt	ASTM D445	12,65
Shear Stability Index	-	ASTM D6278	3
Flash point	°C	ASTM D93	200

### Thickening Efficiency Of Viscotech® 535L

KV @ 100 °C (cSt)	7,6	9,5	12,0	14,6	17,5	21,9	26,4
Dosage in GR III, 6 cSt (% w/w)	2,5	5,0	7,5	10,0	12,5	15,0	17,5

The abovementioned properties are typical and should not be used as quality control parameters to accept or reject the product.

### Handling & Storage

Treatment levels depend on the used base stocks. It is recommended to perform a blend study to optimise the viscosity levels.

Minimum loading/unloading/pumping temperature	80 °C
Maximum loading/unloading/pumping temperature	110 °C
Maximum blending temperature	100 °C
Maximum storage temperature	80 °C
Maximum long-term storage temperature	60 °C

An MSDS is available upon request. All liquid Viscotech® VMs are available in bulk, drums & IBCs.

### FOR MORE INFORMATION

Please contact

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### IMPORTANT NOTICE

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