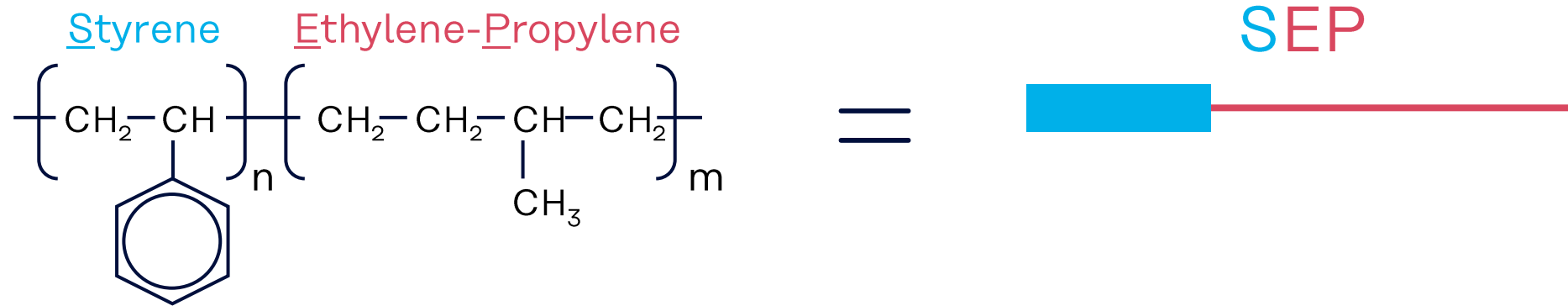


# Introduction of SEPTON™ 1020 (SEP for Thixotropic Gel)

Elastomer R&D Dept.  
Elastomer Division

***kuraray*** **Septon™**

# SEP: Styrene-(Ethylene-Propylene) Diblock Copolymer



Typical properties of SEPTON™ 1020

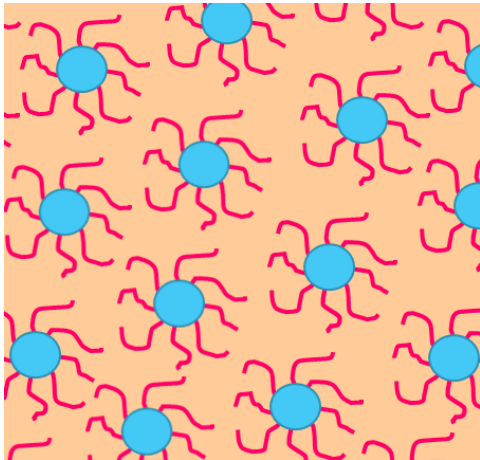
Styrene content (wt%)	36
MFR / 200 deg. C, 10 kg (g/10 min)	1.8
Hardness (Type A)	70
Solution Viscosity, 30 deg. C, 10 wt% in toluene	42

# Thixotropic Gel using SEP

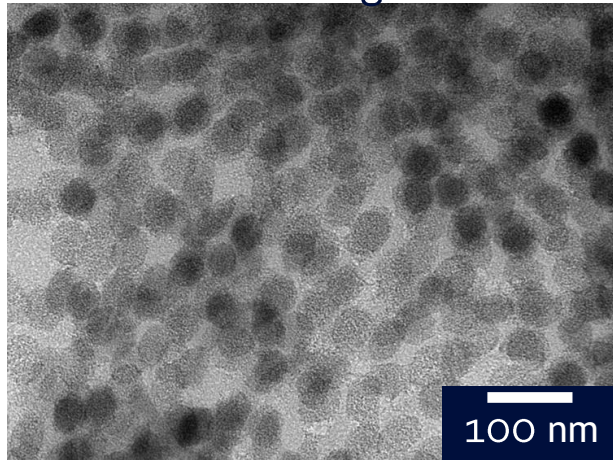
Styrene-segment Low affinity to oil



forms into micelle in oil solution



TEM Image



SEPTON™ 1020/Oil (10/90 by wt)

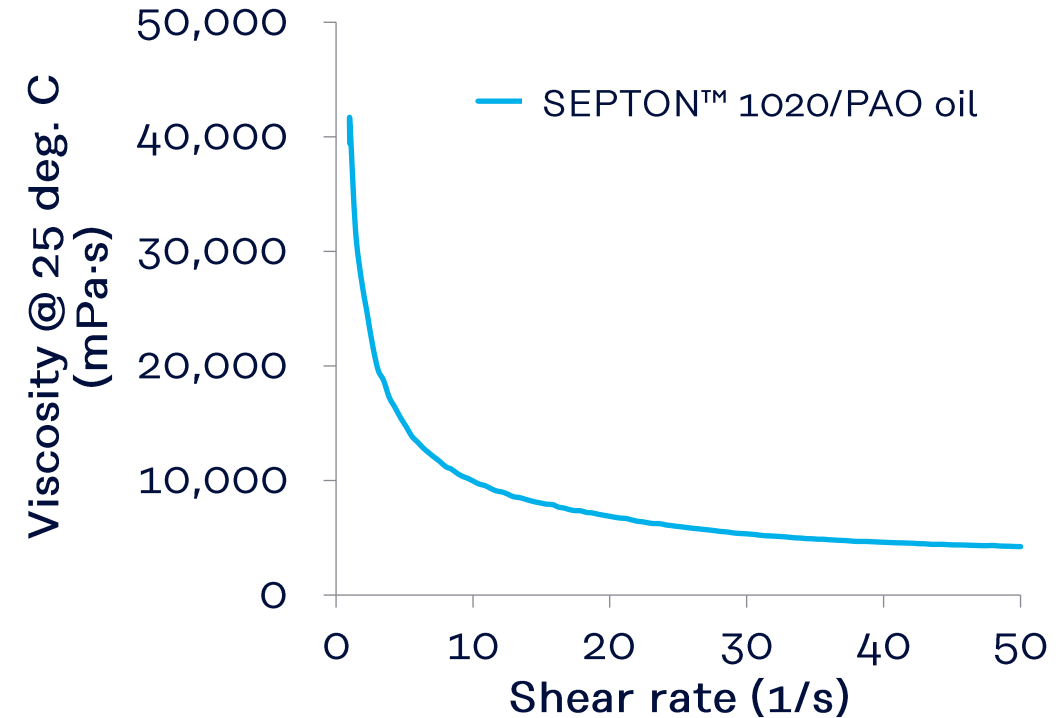
## Advantages of SEP-oil gel formulations

- **Thixotropy**  
Low viscosity for easy processing & high viscosity as gel product
- **High dropping point**  
Maintains a semisolid form at high temperatures
- **Good oil holding property**  
Little oil migration at high temperatures

SEP-oil gel formulations are used in various applications such as cable filling, grease, etc.

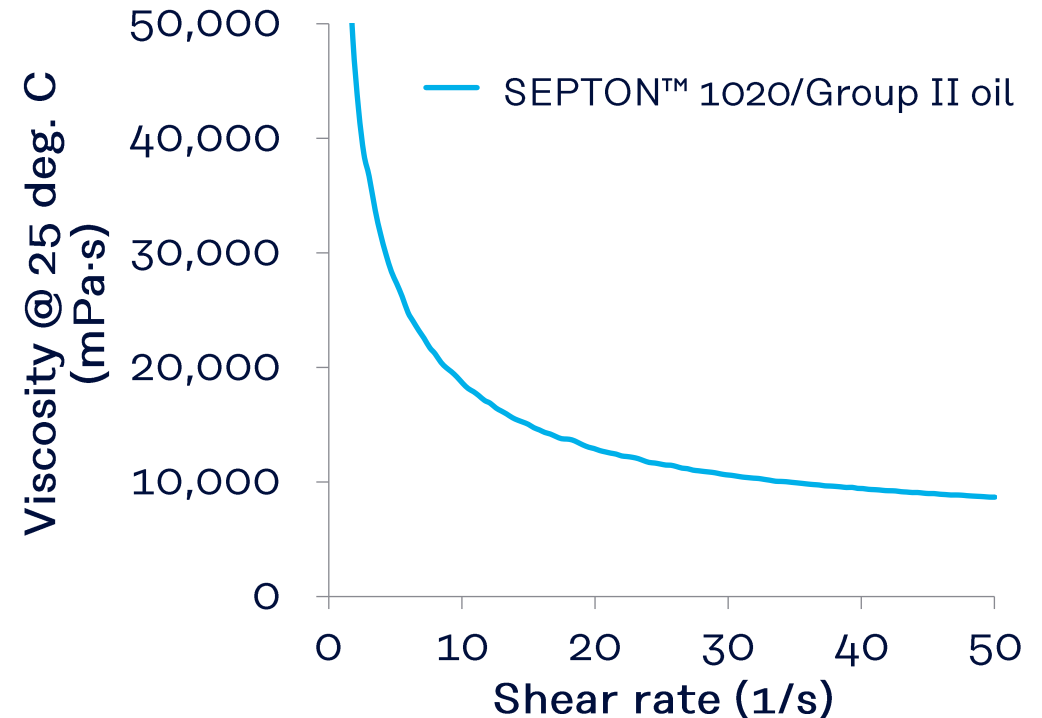
# Gel Properties in Poly- $\alpha$ -olefin (PAO) Oil (10 wt%)

10 wt% in PAO oil (31 cSt @ 40 deg. C)	SEPTON™ 1020
Gel viscosity (mPa·s) @ 25 deg. C, 50 s <sup>-1</sup>	4,000
Penetration (JIS K 2220)	363
Dropping point (deg. C) (JIS K 2220)	205
Oil separation degree (wt%) @ 80 deg. C, 24 h	0.4
Appearance	Clear



# Gel Properties in Group II Mineral Oil (9.1 wt%)

9.1 wt% in Group II oil (32 cSt @ 40 deg. C )	SEPTON™ 1020
Gel viscosity (mPa·s) @ 25 deg. C, 50 s <sup>-1</sup>	9,200
Penetration (JIS K 2220)	402
Dropping point (deg. C) (JIS K 2220)	193
Oil separation degree (wt%) @ 80 deg. C, 24 h	0.3
Appearance	Clear



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Precautions should be taken in handling and storage. Please refer to the appropriate Safety Data Sheet for further safety information. In using SEPTON™, please confirm related laws and regulations, and examine its safety and suitability for the application.

For medical, health care and food contact applications, please contact your Kuraray representative for specific recommendations. Even so, users must conduct their own assessment, revisions, registrations as well rely in their own technical and legal judgment to establish the safety and efficacy of their compound and/or end product with SEPTON™ for any application. SEPTON™ should not be used in any devices or materials intended for implantation in the human body. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement.

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