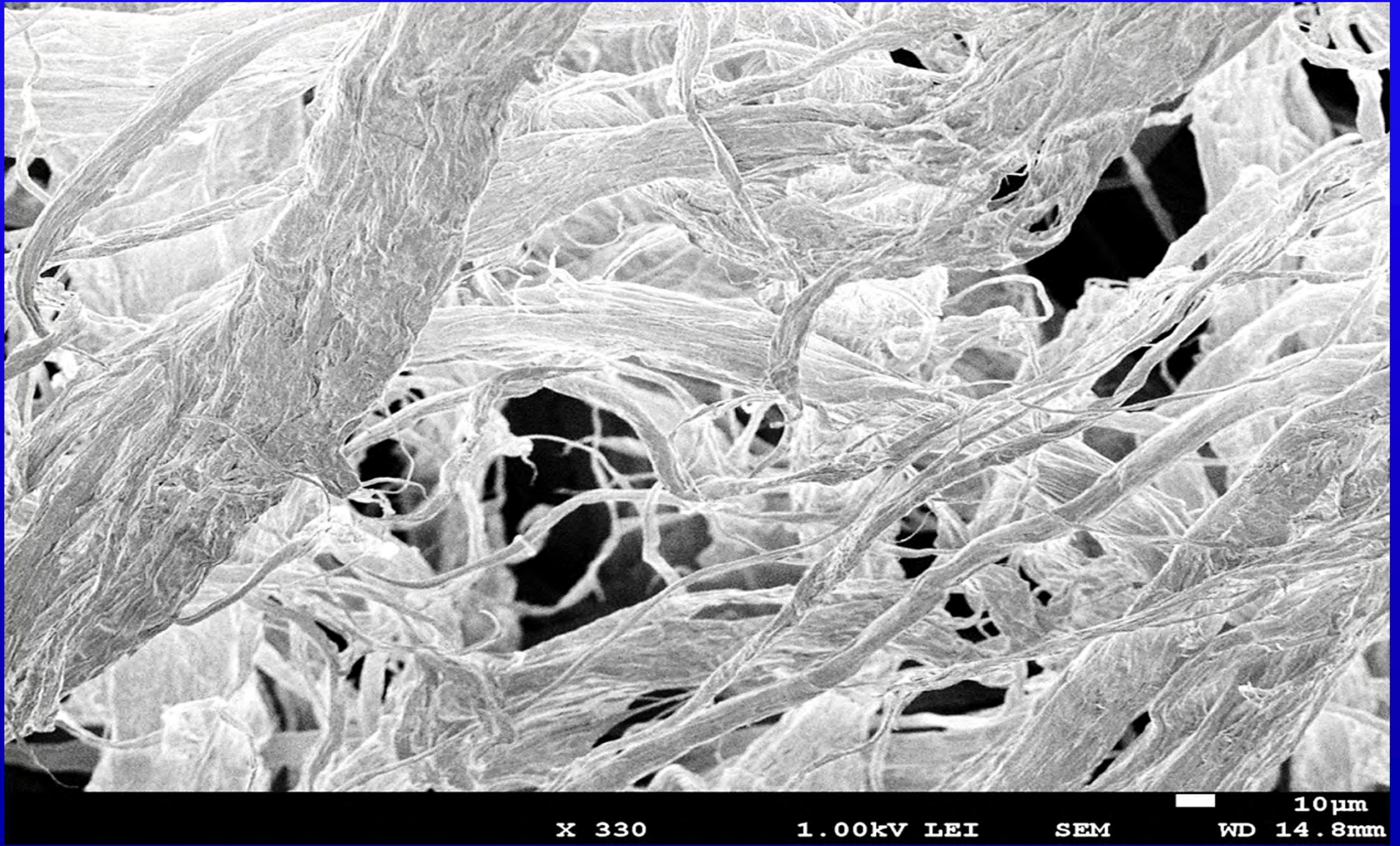


**Short Stuff®**  
An Alternative to  
Fumed Silica for Rheology  
in Epoxy & Silicone Resin  
Systems

***MINIFIBERS, INC.***

# Short Stuff<sup>®</sup>



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# Fumed Silica Replacement

## **Fumed silica brings nuisance dust issues**

Short Stuff<sup>®</sup> is non dusting and much easier to handle, and improves working conditions.

## **Economics**

Short Stuff<sup>®</sup> is price competitive vs fumed silica, and may provide equal rheology at up to **50%** less by weight in Epoxy systems.

## **Consistency**

Short Stuff<sup>®</sup> works physically to impart rheology, so performance variation in different resins is reduced.

## **Predictable Rheology**

Short Stuff<sup>®</sup> provides consistent, reproducible rheology without the fluctuation often observed with fumed silica.

## **Product Packaging**

Short Stuff<sup>®</sup> is available in 15 lb. paper bags, and a shipment contains significantly more product than fumed silica.

# What Do I Need To Know?

**Does the application currently use Hydrophobic or Hydrophilic Fumed Silica?**

Treated Fumed Silica is Hydrophobic

Un-Treated Short Stuff<sup>®</sup> is Hydrophobic.

**What are the Gloss or Sheen requirements?**

Short Stuff<sup>®</sup> may reduce the gloss/sheen if a larger grade is used.

**What is the applied film thickness?**

Short Stuff<sup>®</sup> is limited to wet film thickness of 3+ mils to prevent texture or visible fibrils in the dry film.

**Is Film Clarity a Requirement?**

Short Stuff<sup>®</sup> remains opaque after dispersion.

# What Do I Need To Know?

## **Where should I add Short Stuff® in a 2k Epoxy System?**

Add to Part A for medium to high viscosity Epoxy systems.

Add to Part B for low viscosity Epoxy systems.

Short Stuff® can be post added under sheer on the job site.

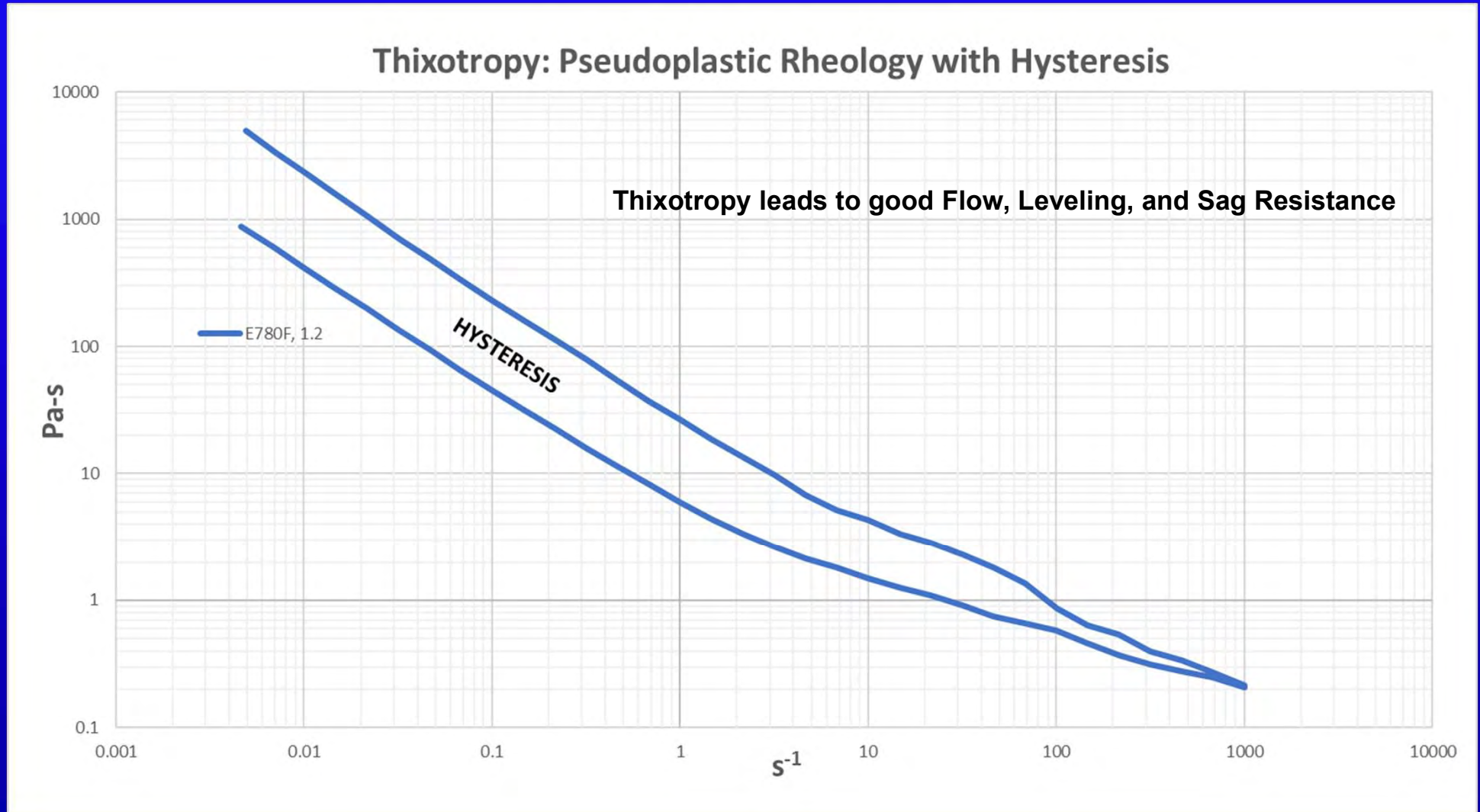
## **How should I add the Short Stuff® ?**

Short Stuff® is very sheer stable, and can be added under high sheer with a Cowles blade, in a media mill, or with an in line roto-stator mixer.

## **Does Short Stuff® require special application methods?**

Formulas containing Short Stuff® can be applied by brush, roll, or spray

# The Rheology of Short Stuff<sup>®</sup>



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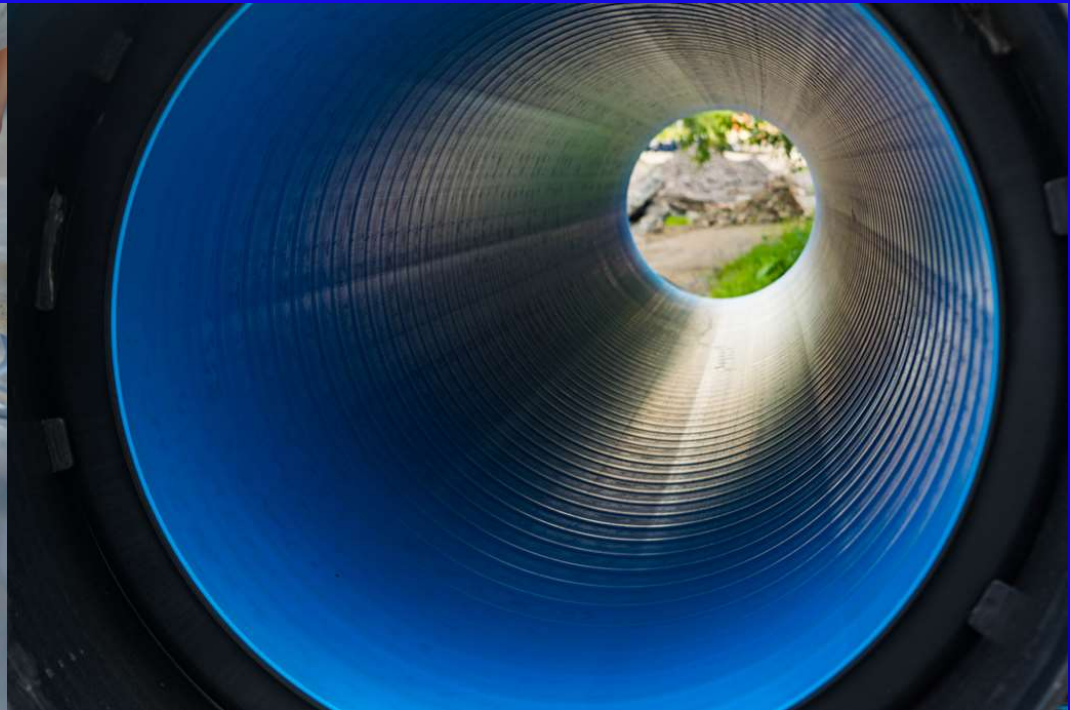
# Range of Sizes

## SHORT STUFF<sup>®</sup> Highly Fibrillated HDPE

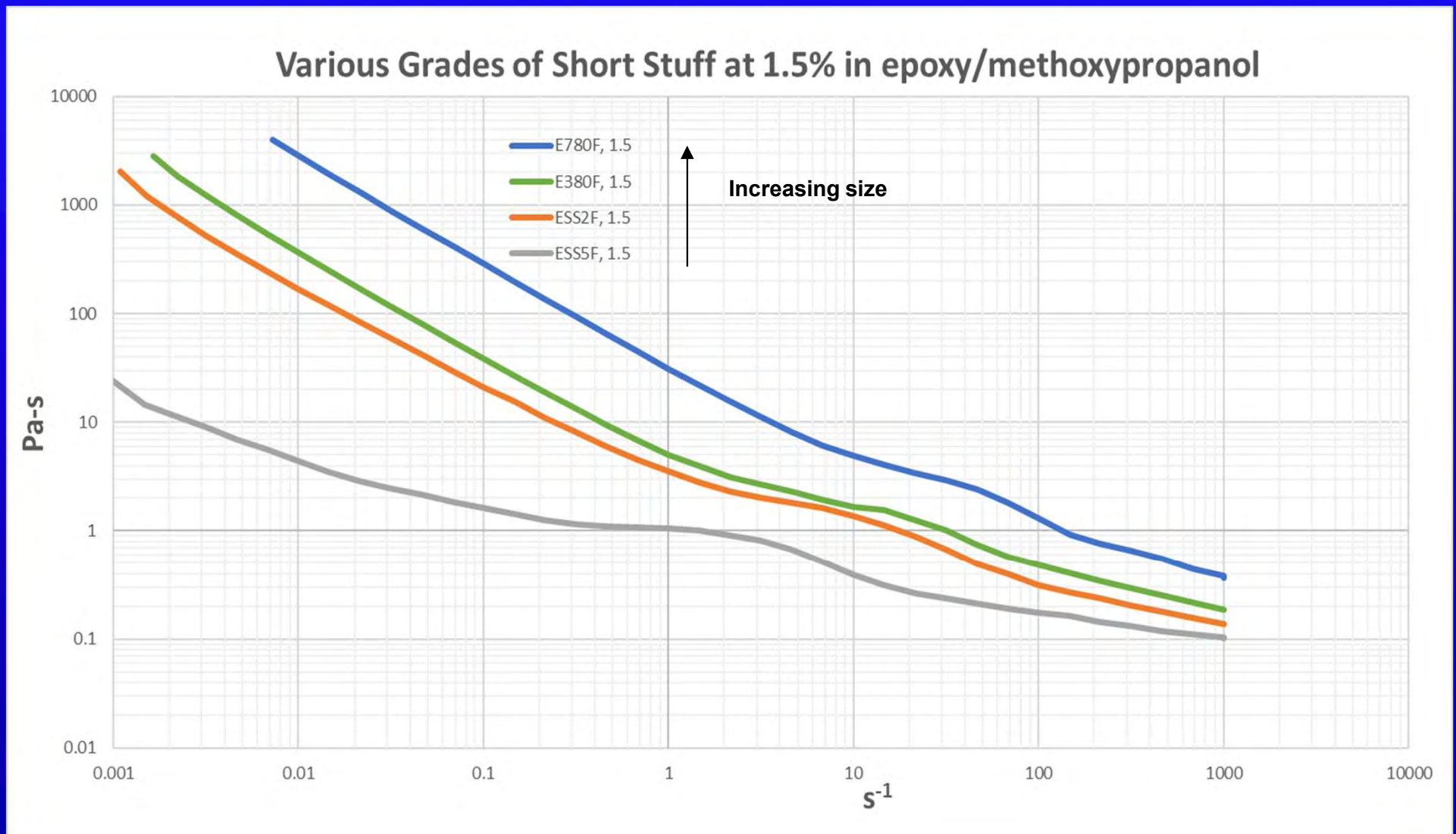
GRADE	ESS5F	ESS50F*	ESS2F	ESS20F*	E380F	E505F*	E620F	E780F	E990F
Average Length (mm)	~0.1	~0.1	~0.6	~0.6	~0.5	~0.6	~0.65	~0.9	~1.0
Diameter (microns)	5	5	5	5	15	15	15	25	20
Surface Area (m <sup>2</sup> /gm) Measured by gas absorption	12	12	12	12	8	8	8	8	8
Melting Point	~135°C / ~275°F								
Moisture Content (%)	<2.0								
Specific Gravity (g/cm <sup>3</sup> )	0.96								

\* For improved dispersion in aqueous systems.

# Short Stuff® in Epoxy

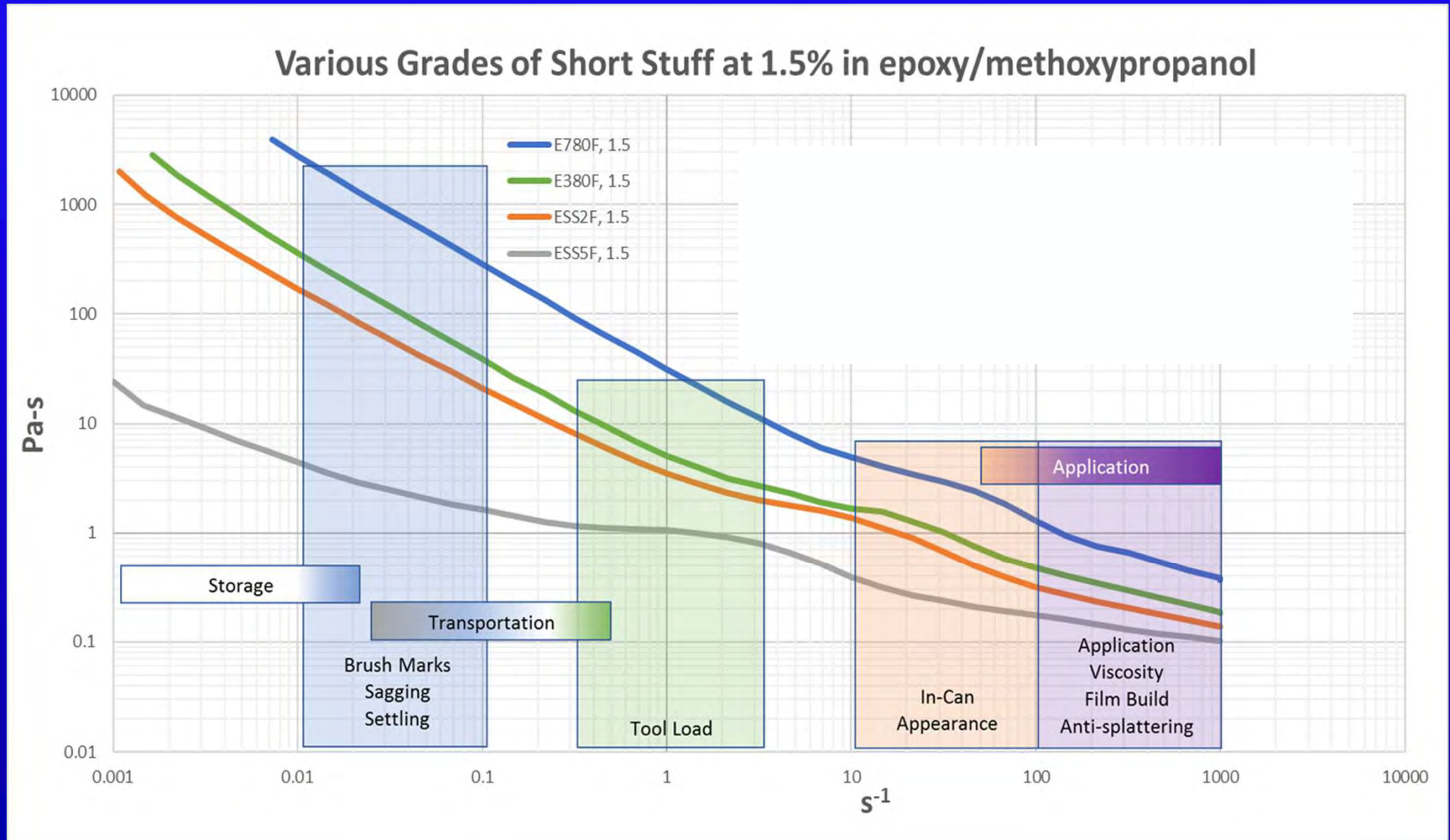


# The Rheology of Short Stuff<sup>®</sup> in Epoxy



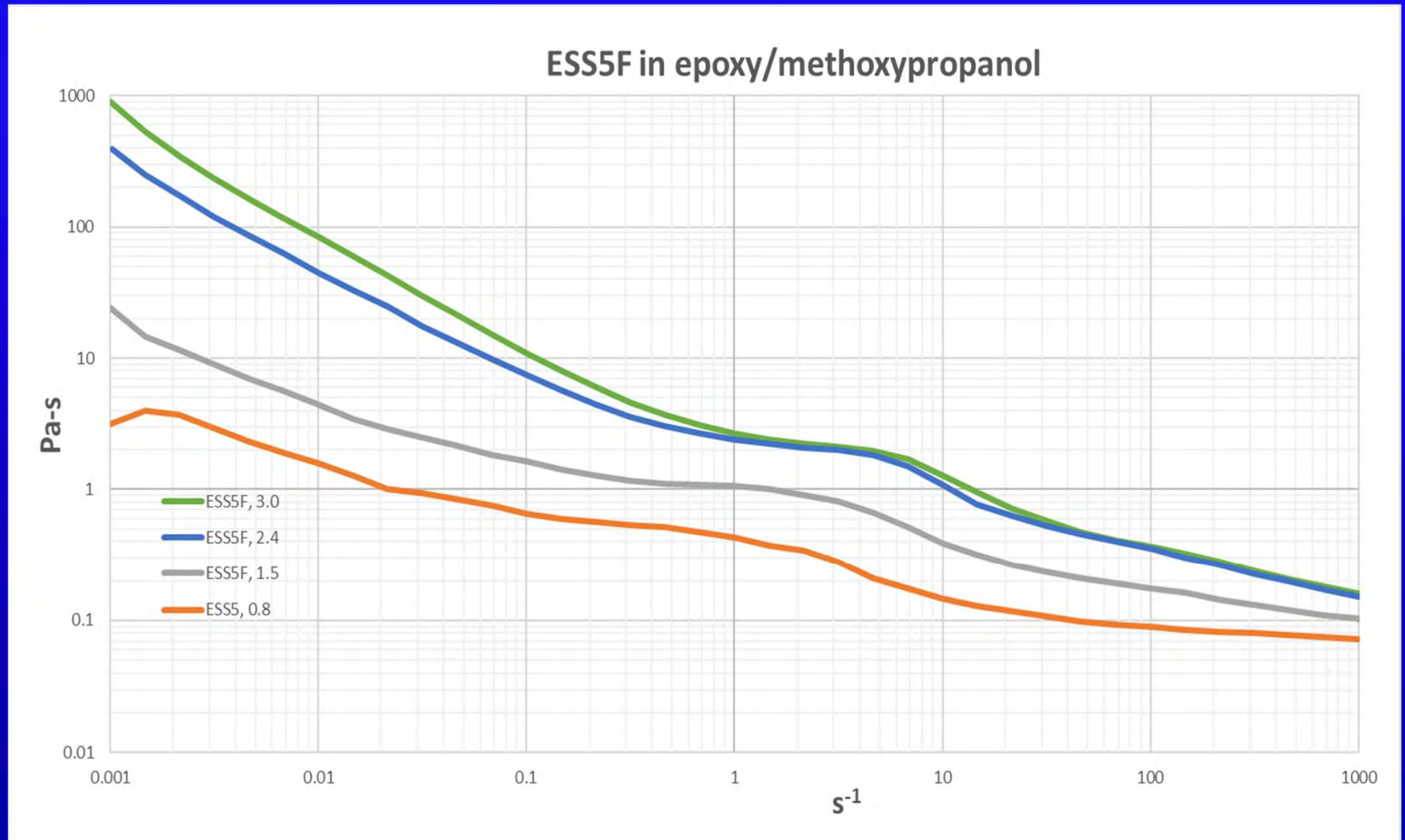
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# The Rheology of Short Stuff<sup>®</sup> in Epoxy



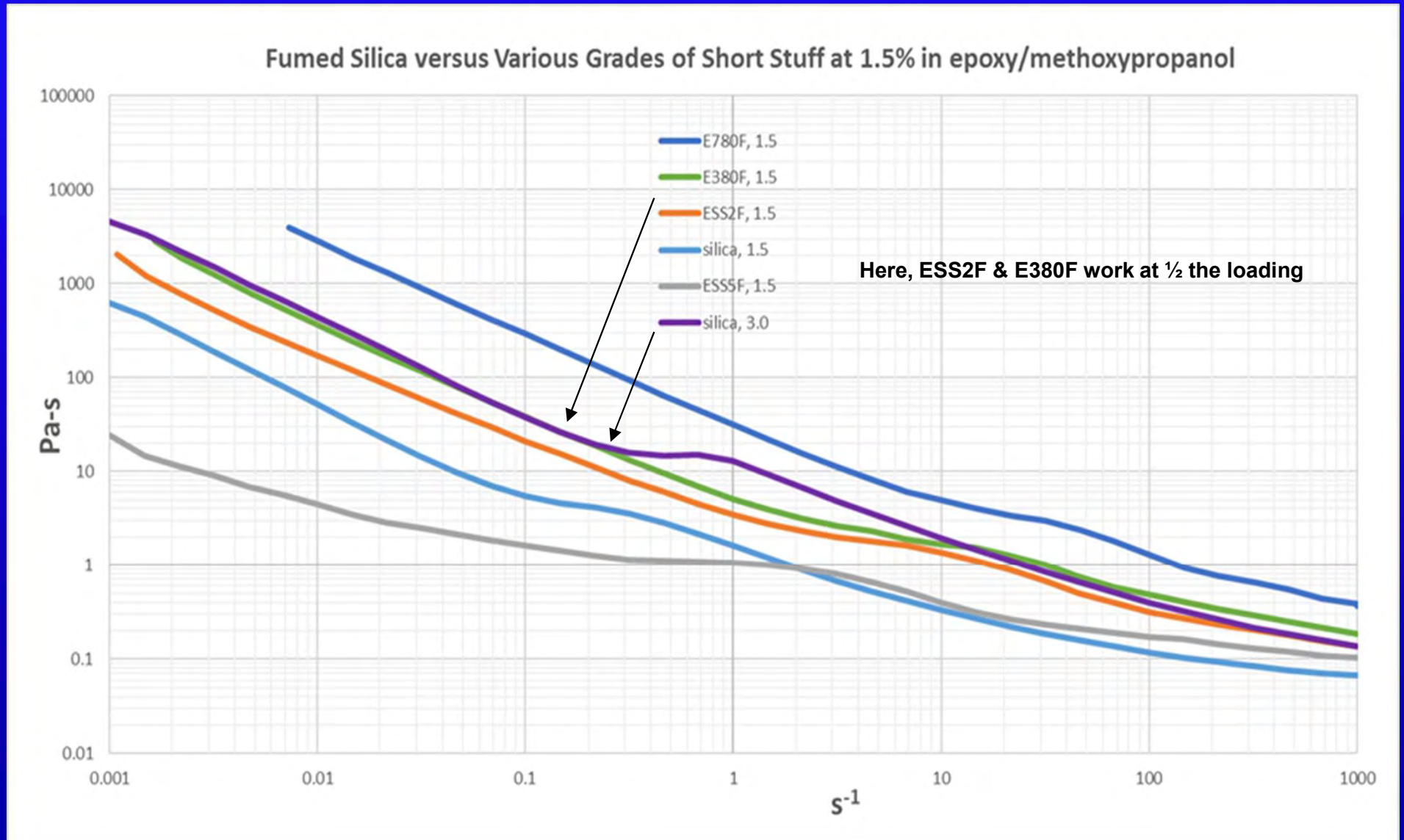
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# The Rheology of Short Stuff<sup>®</sup> in Epoxy



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# Fumed Silica Replacement in Epoxy

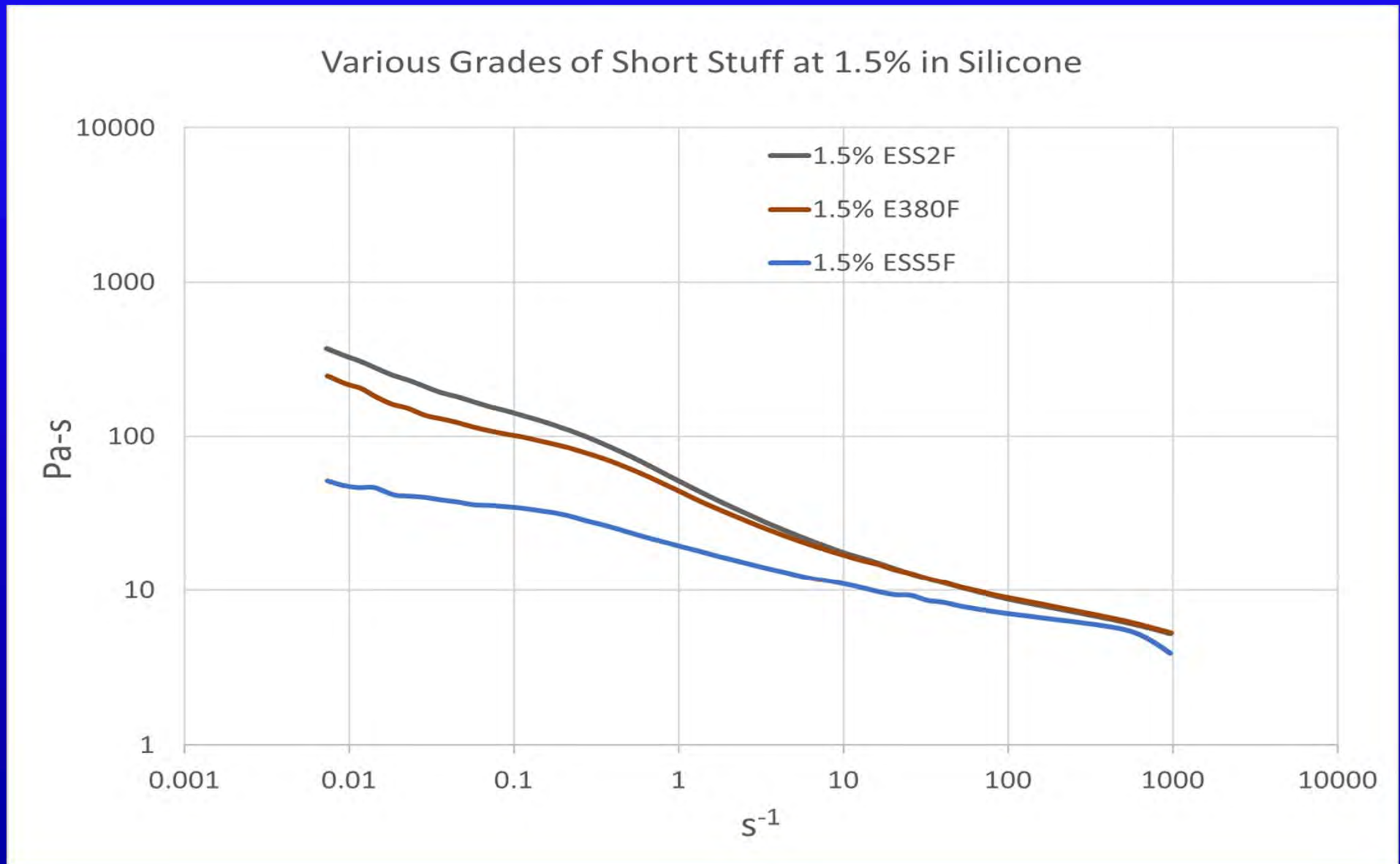


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# Short Stuff<sup>®</sup> in Silicone

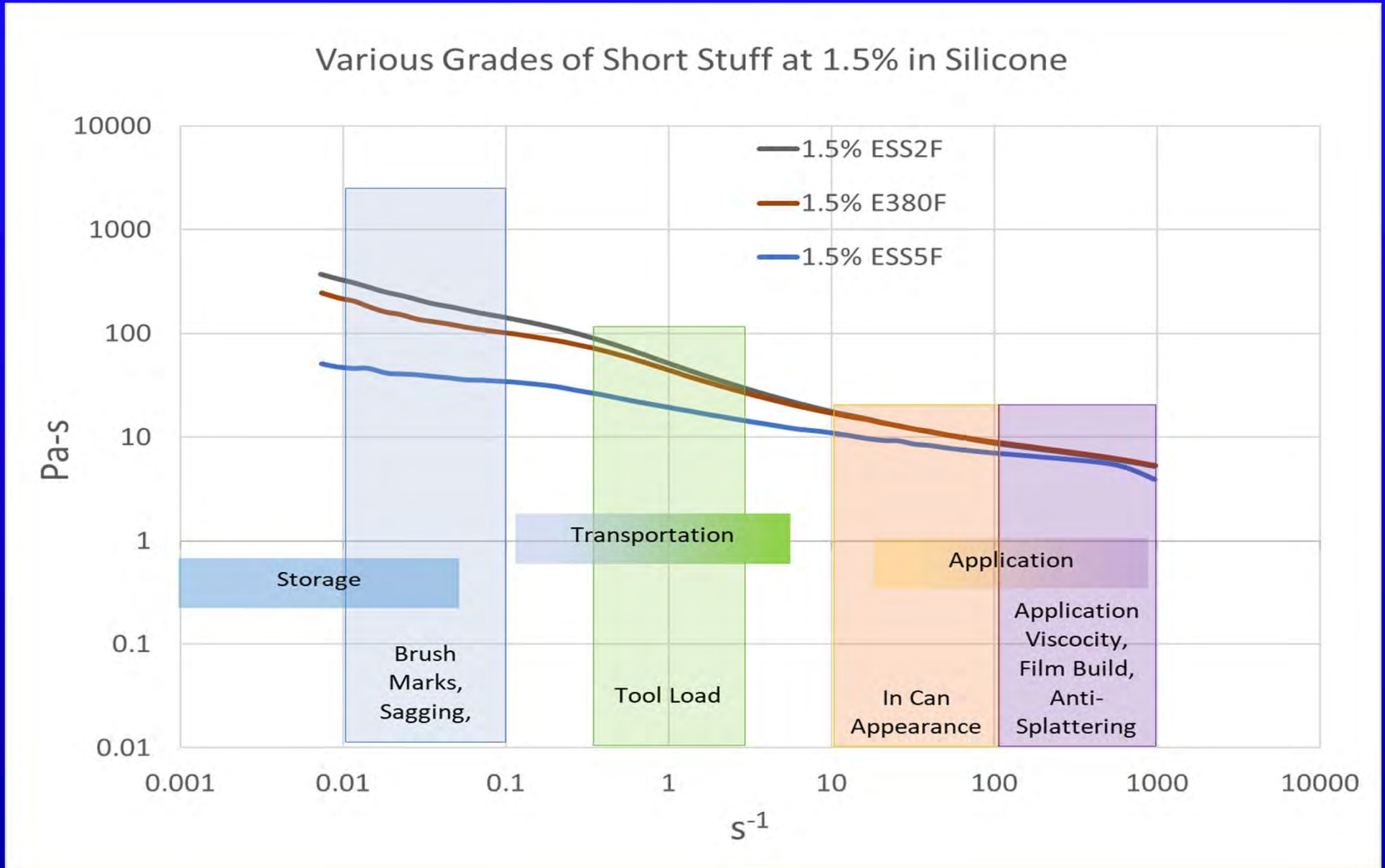


# The Rheology of Short Stuff<sup>®</sup> in Silicone



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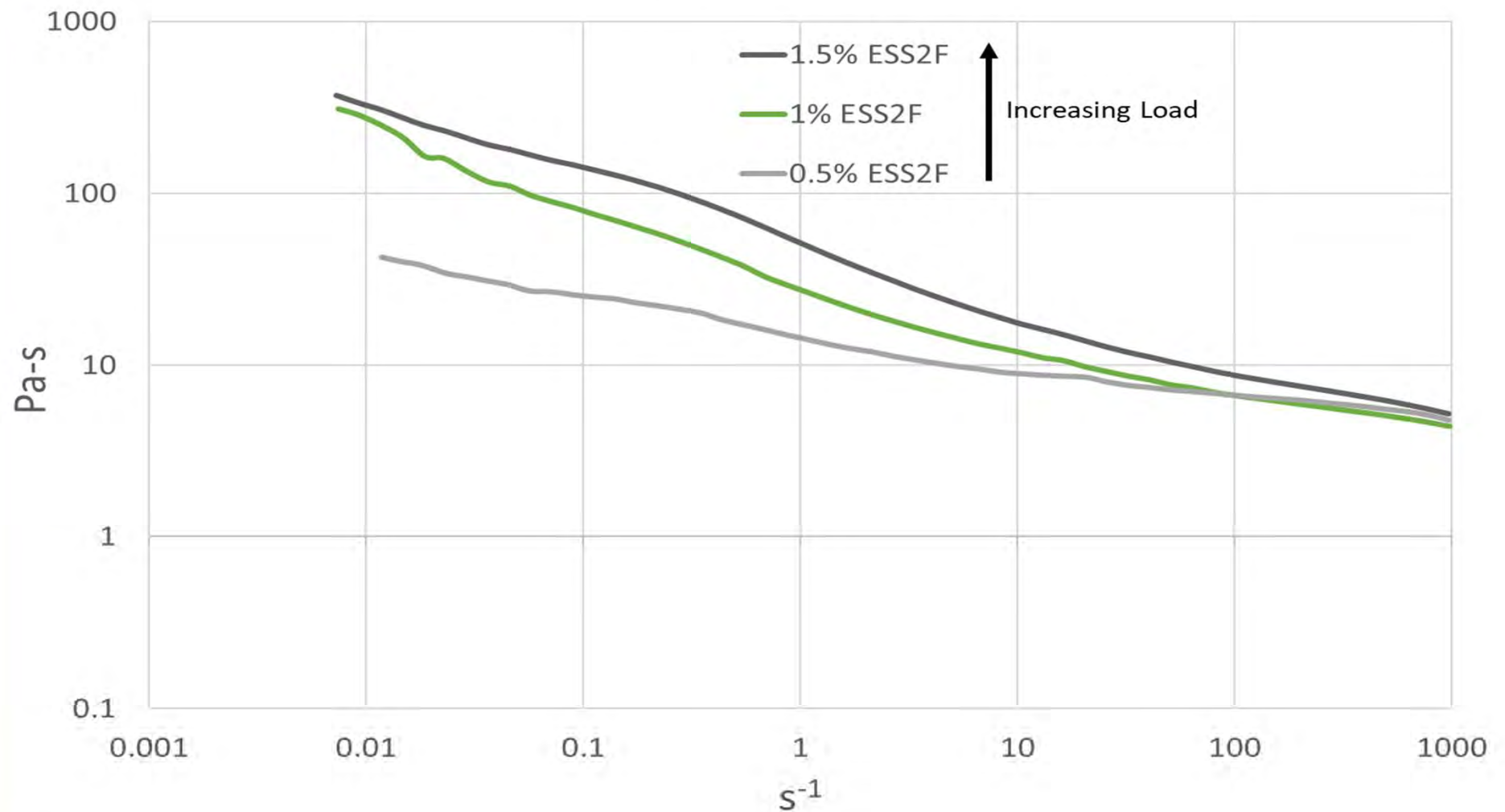
# The Rheology of Short Stuff<sup>®</sup> in Silicone



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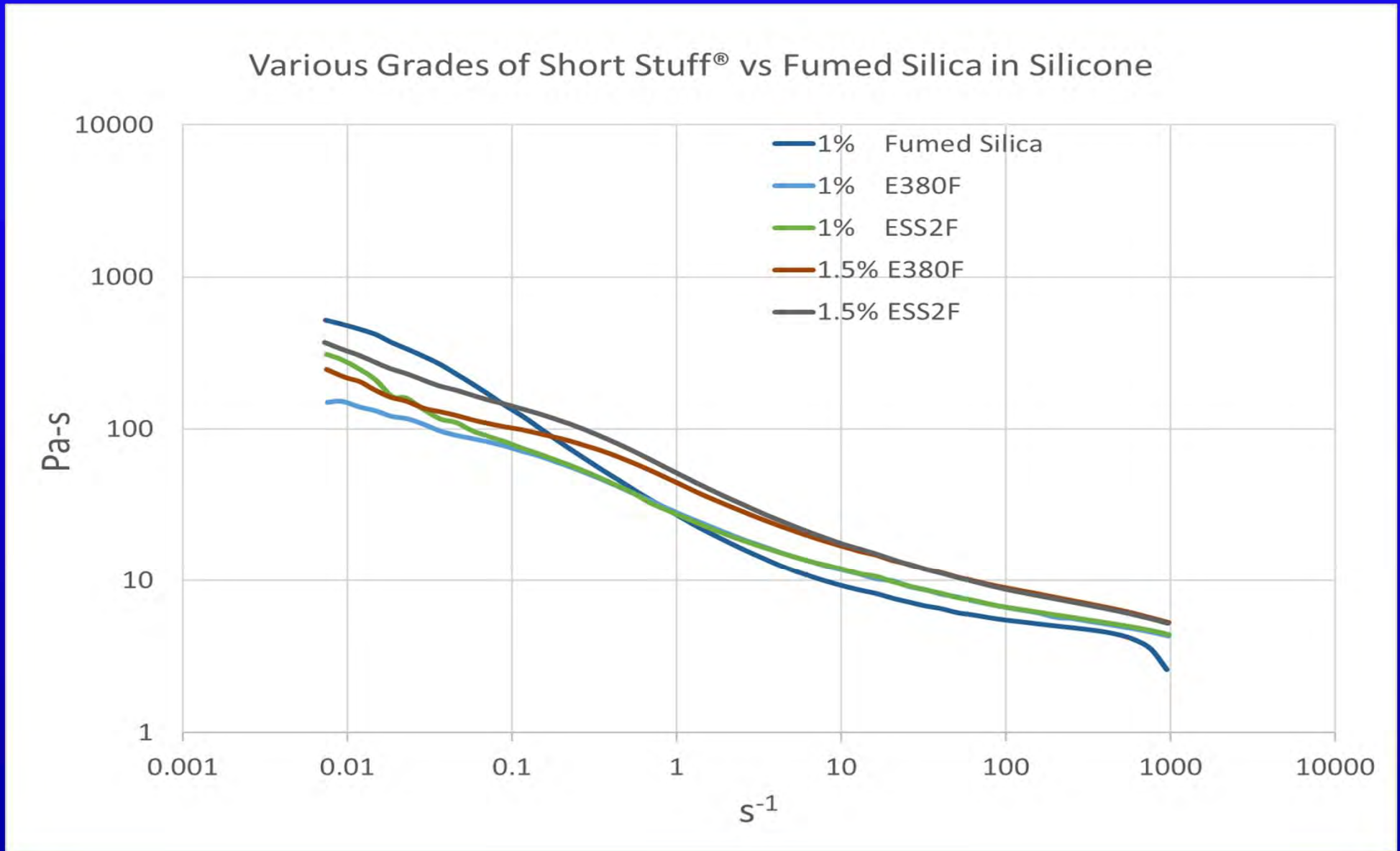
# The Rheology of Short Stuff<sup>®</sup> in Silicone

ESS2F in Silicone



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# Fumed Silica Replacement in Silicone



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# Short Stuff<sup>®</sup> Summary

**Short Stuff<sup>®</sup> is an effective alternative to Fumed Silica in many epoxy & silicone based systems.**

- The larger the grade the more thickening observed.
- As you increase loading you get more thickening.
- In many Epoxy systems you can use **50%** less by weight.

**In silicone systems equal weight may be required. Final amount may be formula specific.**

**Short Stuff<sup>®</sup> performance is not compromised or influenced by system pH, or normal batch temperatures.**

**Short Stuff<sup>®</sup> offers a price competitive alternative to Fumed Silica, and several logistical advantages.**