

POSS® Nanosilica Dispersion

EP4F09.01 is two reinforcing agents in one. EP0409 is a hybrid, 1.5nm molecule with an inorganic silsequioxane at the core, and organic glycidyl groups attached at the corners of the cage, which acts as a multifunctional crosslinker. 30 weight percent of 20nm nanosilica is completely dispersed into the EP0409, creating a clear, colorless liquid which is easily blended into other systems. EP0409 serves as a high temperature reactive diluent in both aromatic and aliphatic epoxy resin affording 40%-70% viscosity reductions. EP0409 can be formulated with aliphatic amines to provide, low viscosity, room temperature cure and high HDT composite resins and adhesives. The "POSS-HDT-Effect" is recognized by increased rubbery plateau modulus. POSS molecules also have robust resistance to environmental degradation such as, moisture, oxidation, corrosion, and various types of radiation. The 30% silica improves the reinforcement even more.

PHYSICAL PROPERTIES

Molecular/Chemical Formula: $(C_6H_{11}O_2)_n(SiO_{1.5})_n$ n=8, 10, 12

Molecular Weight: 1338 - 2007

Appearance: clear, colorless liquid

Viscosity (Shear Rate 10sec⁻¹)

25°C 142 Poise

50°C 35.8 Poise

75°C 13.3 Poise

Thermal Stability

(5% weight loss): 345°C

Solvent Solubility: THF, chloroform, toluene

Solvent Insolubility: water, hexane

Resin Solubility: aromatic and aliphatic epoxy resins

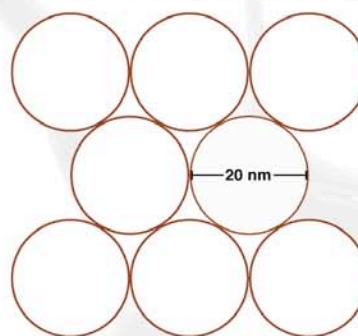
AVAILABILITY

EP4F09.01 is available in R&D and bulk quantities.

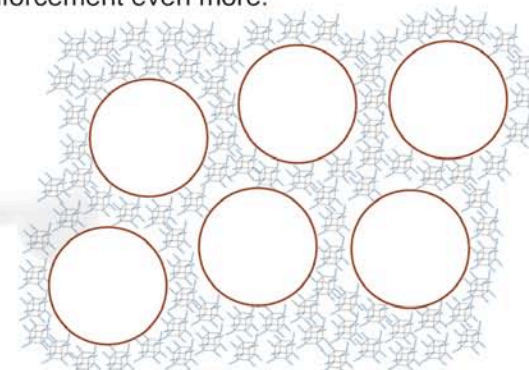
Contact info@hybridplastics.com for a quote.

WARRANTY

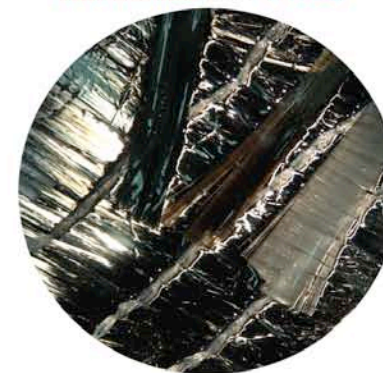
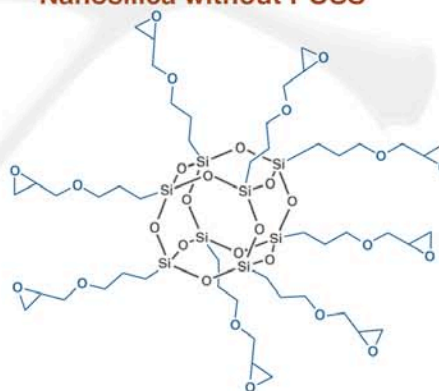
The information contained herein is believed to be accurate and reliable. However, the user is responsible for determining the suitability and use of the final formulations/products. Hybrid Plastics® warrants that its products will meet specifications, but not merchantability or fitness for use.



Nanosilica without POSS®



Nanosilica with POSS®



At less than 1/10th the diameter of nanosilica, POSS® allows for increased flow properties while maintaining and enhancing the mechanical advantages of nanosilica.

It is also excellent at fully wetting carbon, basalt, and glass fibers.