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 (Sheer 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.

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