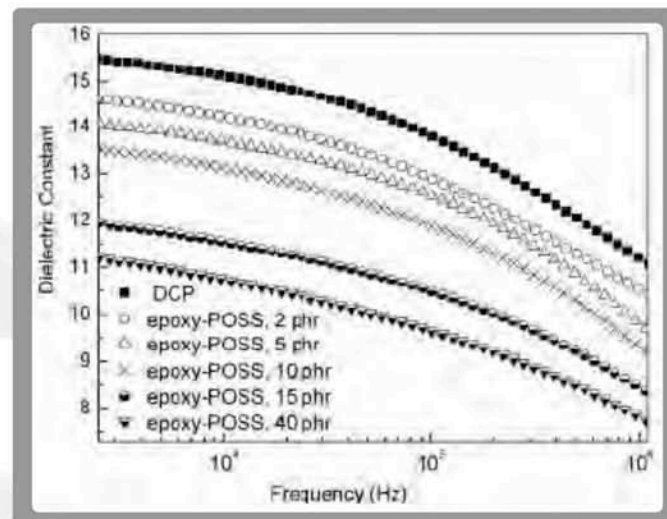
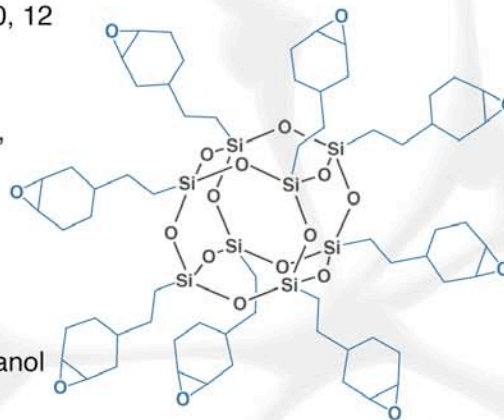


EP0408 for HXNBR Reinforcement

EP0408 is a hybrid molecule with an inorganic silsequioxane at the core, and organic epoxy cyclohexyl groups attached at the corners of the cage. It is a yellow, semi-solid compound. It is soluble in many polar organic solvents, and aromatic and aliphatic epoxy resins, but is insoluble in non-polar organic solvents. When used as a crosslinker in hydrogenated carboxylated nitrile rubber (HXNBR), EP0408 increases modulus, glass transition temperature, cross link density and degree of heterogeneity. Its high volume cage structure also leads to a decrease in the dielectric constant of the rubber.

PHYSICAL PROPERTIES

Molecular/Chemical Formula:	$(C_8H_{13}O)_n(SiO_{1.5/n})_n$, n=8, 10, 12
Molecular Weight:	1418 - 2127
Epoxy Equivalent Weight:	177
Appearance:	Clear, pale yellow/orange, semi-solid
Density:	1.24 g/mL
Refractive index:	1.52
Viscosity (@ 60°C):	500 Poise
Thermal Stability (5% weight loss):	403°C
Solvent Solubility:	THF, chloroform, isopropanol
Solvent Insolubility:	hexane
Resin Solubility:	aromatic and aliphatic epoxy resins

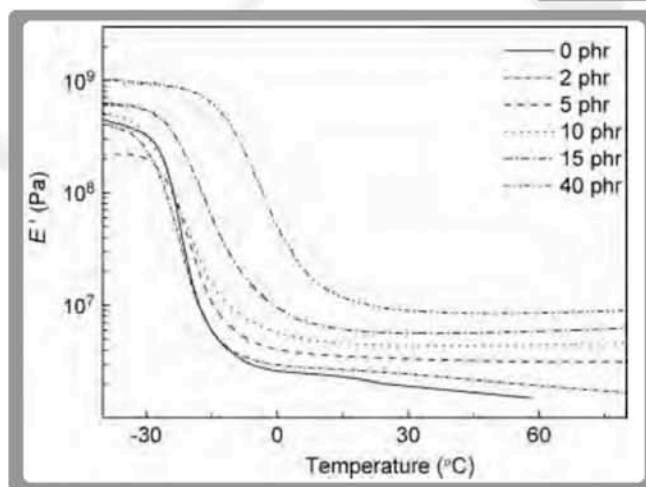


AVAILABILITY

EP0408 is available in R&D and bulk quantities. Contact us at 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.



Increasing EP0408 concentration leads to a reduction in the dielectric constant of the rubber

EP0408 improves the modulus both above and below the glass transition temperature. T_g is also increased.

Data from: Liu, et. al., Polym Int (2010)