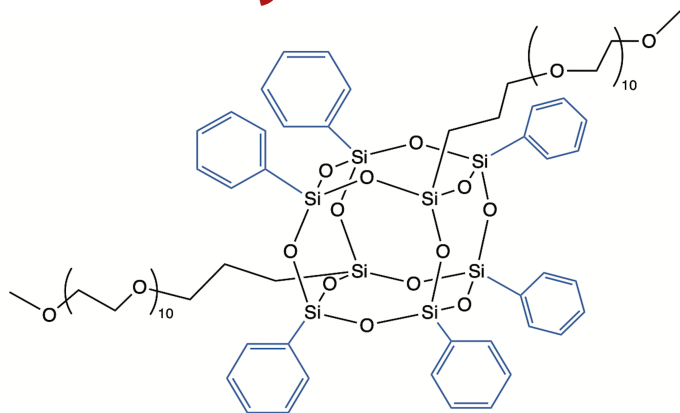


Phenyl PEG POSS®



PERFORMANCE BENEFITS

Pigment & Filler Dispersion Agent- Excellent wetting of colorants, fillers, and nanomaterials; reduces agglomeration and improves uniformity.

Hardness & Modulus Enhancement- Increases surface hardness and elastic modulus in glassy coatings and composites.

Toughening Agent- Improves toughness and impact resistance without sacrificing clarity or Tg.

Rheological Diluent- Lowers the viscosity of high-solids systems while maintaining or improving mechanical properties.

High-Temperature Stability- Enhances thermal and thermo-oxidative resistance (>300°C)

Adhesion Promoter- Improves interfacial bonding to metals, glass, and polymers/resins.

TYPICAL PROPERTIES

Appearance	Colorless to pale-yellow liquid
Viscosity @25°C	1.21-1.41 Pa-s
Chemical Formula	C ₈₄ H ₁₂₈ O ₃₄ Si ₈
Refractive Index	1.5069 @21.4 °C
Formula Weight	1906.59
Resin Solubility	Epoxy, urethane, aromatic resins

SUGGESTED FORMULATION

HC0813.31 is a low viscosity liquid that is readily miscible with a wide range of organic resins including oils & waxes.

HC0813.31 can also greatly reduce viscosity and readily wets pigments and fillers to aid in their dispersion. HC0813.31 uniquely provides antiplasticization at loadings < 0.25 wt%. Plasticization is observed at loadings > 3%.



FEATURES

HC0813.31 is a hazy to clear, colorless to pale yellow liquid. It is a resin-compatible dispersion and anti-plasticization additive (in epoxy) with inherent UVC/B sorption.

DESCRIPTION

HC0813.31 is a hybrid molecule with a rigid inorganic silsesquioxane at the core and organic phenyl and PEG groups attached at the corners of the cage. HC0813.31 is a colorless to pale-yellow liquid. It is very stable, does not agglomerate at high loadings and extremely useful for plasticization and adhesion promotion.

COMPATIBILITY

Soluble in water, most solvents, and resins/ oliomers (epoxy, amines, urethanes, acrylics, etc)

REGULATORY STATUS

CASRN (3088519-09-6), INCI (40765), TSCA Exempt. Not a primary dermal irritant.

HANDLING PRECAUTIONS

Product safety information required for safe use is not included in this document. Before handling, read product and material safety data sheets and container labels for safe use, physical health and hazard information. For material safety data information, contact Hybrid.

ADDITIONAL DETAILS

Phenyl PEG POSS® is provided as a mixture of cages sizes 8, 10, 12. The organic groups are randomly distributed around each cage core. The molar ratio is 6:2 for HC0813.31. The structure shown is idealized.

The distribution of cage size and functionality around the cage core is analogous to that for functional copolymers. Heteroleptic cages are represented by the catalog designation HC.



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