

Glycidyl POSS[®] Cage Mixture in PGMEA

EP0409.01.50 features EP0409 POSS dissolved in PGMEA for environmental solvent coating applications.

APPEARANCE

Clear, colorless, low viscosity liquid.

DESCRIPTION

EP0409.01.50 contains the active EP0409 POSS, which is a hybrid molecule with an inorganic silsesquioxane core and organic glycidyl groups attached to the silicon vertices of the cage.

APPLICATIONS AND BENEFITS

EP0409 is designed for use as an additive in solvent-borne coatings. EP0409 POSS provides enhanced adhesion, ingredient compatibility and durability of coatings.

EP3F09.01 PROPERTIES

Appearance	Clear, low viscosity liquid
Viscosity (@25°C)	13.7 mPa-s
Density	1.09 g/ml
Refractive Index	1.51
Formula Weight	1337.88 (octamer)
EEW	165-170
Resin Solubility	epoxy, urethane, acrylic, olefin

REGULATORY STATUS

INCI, REACH pending TSCA, EP0409 CAS 68611-45-0. EP0409 is not a primary dermal irritant.

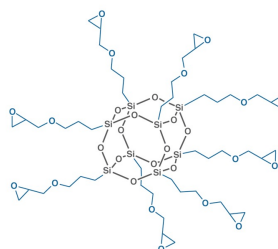
HANDLING PRECAUTIONS

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



PRODUCT BENEFITS

The EP0409 cage molecule is an excellent compatibilizer, rheological diluent and carrier. It has a robust resistance to environmental degradation such as moisture, oxidation, and provides UVB absorption. Additionally, EP0409 has outstanding dispersion characteristics for particles, ingredients and effects.



FEATURED IMAGE

The EP0409 octamer structure is shown.

EP0409 STRUCTURE AND FUNCTION

EP0409 is a mixture of cage sizes 8, 10 and 12. The EP0409 POSS is a hybrid, 1.5 nm molecule with an inorganic silsesquioxane core and organic glycidyl groups attached at the corners of the cage, which act as multifunctional cross-links and dispersant arms. EP0409 shows high compatibility and diluent properties in urethane, epoxy and acrylic resins. As a cross-linker, EP0409 retains modulus above glass transition and increases hardness.

RELATED LITERATURE

1. Cross-linking of CTBN: DOI 10.1007/S10973-015-5019-9
2. Increased Thermal Stability of POM: DOI 10.1002/pc.21191
3. Decreased water uptake in epoxy resin: DOI 10.1007/s00289-015-1475-4.
DOI 10.1002/app
4. Impact Improvement in Epoxidized Pine Oil: DOI: 10.1002/app.42451.

