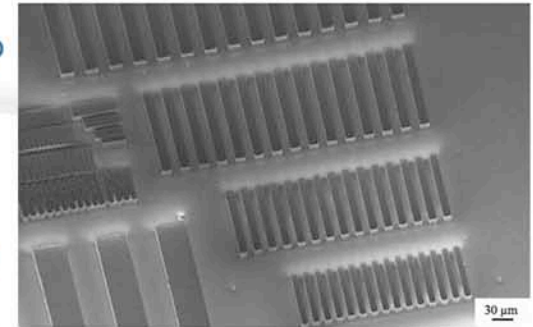
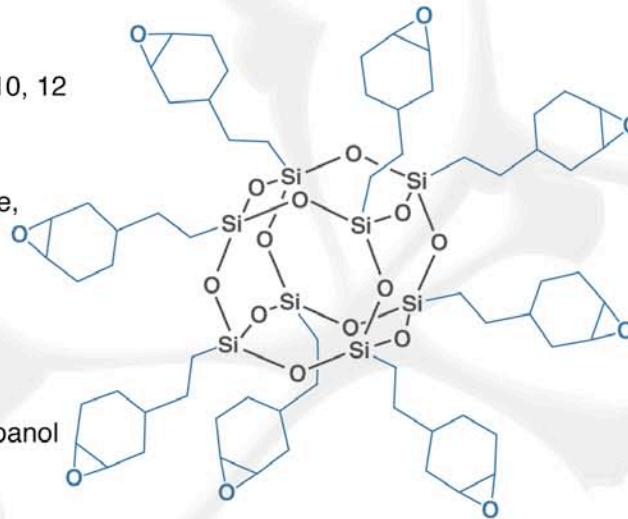


EP0408 Dielectric Coating

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. EP0408 can be cured with aromatic and aliphatic amines, and provide increased use temperature, excellent water and solvent resistance, and enhanced thermomechanical performance. EP0408 provides a resilient, strong inorganic/ organic hybrid dielectric for use in microfabrication. Its thermal and chemical stability allow for a tough and durable overcoat. The combination of high modulus, chemical and thermal stability, and high selectivity are desirable attributes, making EP0408 an interesting permanent dielectric or temporary etch mask.

PHYSICAL PROPERTIES

Molecular/Chemical Formula:	$(C_8H_{13}O)_n(SiO_{1.5})_n$ 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



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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.

CHF ₃ concentration	POSS Etch Rate (μm/min)	PPC/POSS Selectivity
0%	0.003	220
1%	0.007	95
2%	0.02	33
4%	0.023	29
6%	0.027	24
8%	0.04	16.5
10%	0.05	13.2

* Polypropylene carbonate etch rate = 0.66 μm/min

* 250W O₂ plasma