

Hybrid Plastics®

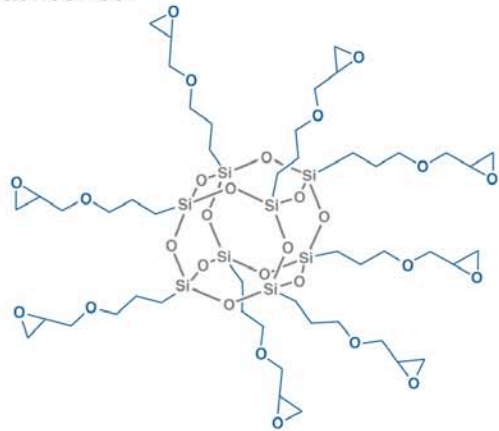
Superior Technology for Superior Products

POSS® Resin EP3512

POSS® Resin EP3512 utilizes Nanostructured® chemical technology to achieve a unique room temperature cured epoxy resin that resists high temperature degradation. Note this resin does NOT contain bisphenol A (BPA). EP3512 is a two-part, unfilled, low viscosity epoxy resin designed for applications requiring high temperature resistance (up to 300°C) with the convenience of room temperature cure. Suggested applications include medical devices, electronics, composites and adhesives.

HOW POSS® EPOXY WORKS

Functionalized POSS® epoxy cage are used to increase and maintain the network rubbery plateau modulus (i.e., the modulus after the glass transition). The resulting epoxy (EP3512) retains its mechanical properties to very high temperatures (up to 300°C), whereas conventional room temperature epoxies lose strength and adhesion after the glass transition (typically 50-100°C). EP3512 can be cured at room temperature due to the low viscosity and free volume of the POSS® molecules and their fast reactivity with aliphatic amines.



PHYSICAL PROPERTIES

POSS content:	50 - 80%
Density (after cure):	1.2 g/mL
Pot life:	1 - 2 hours
Viscosity (after mixing):	<5 Poise
Flexural Modulus:	2.5 - 3 GPa
CTE:	100 ppm/°C
Lap Shear (Al/Al; MEK/Etch):	2500 psi
Appearance after hardening:	clear solid
Shore D Hardness:	85

RECOMMENDED CURE PROCEDURE

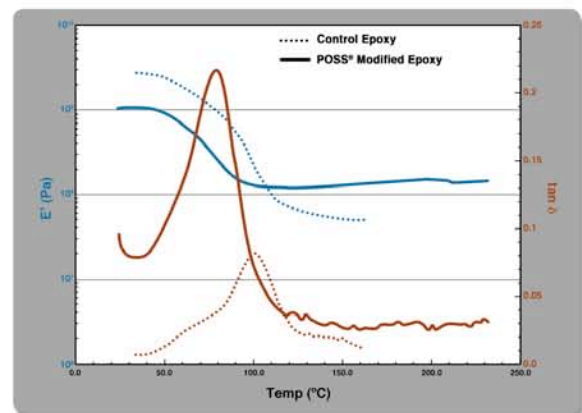
- (1) Store resin/hardener at room temperature
- (2) Thoroughly mix Part A with Part B (6.3:1 by weight)
- (3) The part reaches handling strength after sitting at room temperature for 4-6 hours
- (4) >80% of the mechanical strength is achieved after being cured for 1 day
- (5) Ultimate strength is achieved after 1 week at room temperature

AVAILABILITY

POSS® Resin EP3512 is available in syringes, pails and drums from Hybrid Plastics® and its authorized distributors. Please contact us at info@hybridplastics.com for further information or for a listing of our distributors.

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.



Dynamic Mechanical Analysis