

EN 690

Black Epoxy Sealant

Description

EN 690 is a fast cure, one-part black adhesive based on epoxy resins. It is specially formulated to provide great impact resistance and high strength when cured. The adhesive can be gelled and hardened fast within 7 minutes at 110°C in a convection oven. It does not contain volatile solvents, is water resistant, has great adhesion, and provides good thermal shock properties. It has very good adhesion to electronic parts, most plastics, ceramics and metals. The material has a smooth shiny surface when cured.

Applications

1. Sealing of electronic components like relays
2. Encapsulation of IC devices

Guidelines for Use

1. Thaw the epoxy to room temperature (25°C) before use.
2. Dispense the epoxy by using a syringe.
3. Cure the epoxy by heating at 110°C for 1 hour a convection oven.
4. It is advisable not to leave the epoxy in the sealed can at >25°C for more than 3 days.
5. It is advisable to finish the epoxy within 2 days once opened.

Properties

| Property | Test Method | Unit | Typical Value |
|--|-------------|--------------------|----------------|
| Chemical type | | | Epoxy |
| Appearance | Pen 10 | | Black paste |
| Mix ratio, by weight | | | One component |
| Shelf life, 5°C | Pen 26 | Month | 6 |
| Pot life, 25°C | Pen 26 | Day | 7 |
| Specific gravity, 25°C | Pen 61 | | 1.47 |
| Viscosity, Brookfield CAP2000+, 25°C | Pen 44 | cP | 23,850 |
| Thixotropic index, 1 rpm / 10 rpm | | | 1.32 |
| Flow, 45 ° incline, 110°C | | cm | 44 |
| Gel time, 110°C | | min | 7 |
| Boiling water, wt gain | | % | 1.66 |
| Hardness, cured 110°C for 1 hr | Pen 29 | Shore D | 90 |
| Shear strength | | kgcm ⁻² | 150 |
| Tg, DSC, cured 100°C for 1 hr 110°C for 1 hr | Pen 19 | °C | 111 |
| Cured surface appearance | | - | Smooth, glossy |
| CTE before Tg | Pen 64 | ppm/K | 52 |
| CTE after Tg | Pen 64 | ppm/K | 173 |
| Storage Modulus 40°C | Pen 94 | MPa | 2,178 |
| Loss Modulus 40°C | Pen 94 | MPa | 47 |
| % of Moisture Absorption | Pen 92 | % | <1% |

Recommended Cure

| Schedule | Temp. | Cure Time |
|----------|--------|-----------|
| A | 110 °C | 1 hr |

Storage

Tightly close original container of unused product and store below -20°C. Storing at lower temperatures down to -40°C may prolong shelf life beyond 6 months. However it may take longer time to thaw the product.

Packaging

- 30 ml EFD syringe
- 1 kg plastic jar
- 5 kg plastic pail

Environment, Health & Safety

This product is RoHS compliant. It does not contain any known carcinogenic, mutagenic or teratogenic components.

Contact Information

Penchem Technologies Sdn Bhd
(767120-A), 1015, Jalan Perindustrian Bukit Minyak 7, 14100 Penang, Malaysia
T: +604-501 5976, 77, 78
F: +604-501 5979
E: enquiry@penchem.com
W: www.penchem.com

Revision 6.22-Nov-16.Lye