

Technical Datasheet

Structalit® 5704



Product Description

Modified epoxy | 1 K | solvent-free | heat-curing

- ▶ Glob top
- ▶ Frame in "Frame and Fill" – process
- ▶ Electrics
- ▶ Electronics
- ▶ High stability
- ▶ High glass transition temperature
- ▶ Suitable for semiconductors
- ▶ No bleeding
- ▶ Very low ion content (<10ppm)

Curing Properties

This adhesive can be cured with heat. Typical curing temperatures are listed in the table below.

| Temperatures | Time |
|---|------|
| 30min at 120°C following 45min at 150°C | |
| Alternative 150°C | 1h |

The heat cure times are only provided as a guideline. They are derived from curing a 2g adhesive sample without affixed substrates in a laboratory environment. Actual cure times can vary based on part size, configuration, adhesive volume, temperature control, and the time required for the component substrates to attain oven temperature.

The final bond strength of the adhesive is achieved no sooner than 24 h after the bonded components are removed from the oven.

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| | |
|------------------------|--------|
| Resin | Epoxy |
| Appearance | Black |
| Filler | Quartz |
| Filler - weight [%] | 52 |
| Particle size D95 [µm] | 40 |

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| Uncured Material | |
|---|-------------------|
| Viscosity [mPas] (Kinexus Rheometer, 25 °C, 1s ⁻¹) <i>PE-Norm 064</i> | 300,000 – 500,000 |
| Viscosity [mPas] (Kinexus Rheometer, 25 °C, 10s ⁻¹) <i>PE-Norm 064</i> | 60,000 – 100,000 |
| Thixotropic index [1/10] <i>PE-Norm 064</i> | 4.5 – 6.5 |
| Density [g/cm ³] <i>PE-Norm 004</i> | 1.4 – 1.6 |
| Flash point [°C] <i>PE-Norm 050</i> | >100 |
| Working life [days] <i>@ room temperature</i> | 3 |
| Cured Material | |
| Hardness shore D <i>PE-Norm 006</i> | 75 – 90 |
| Temperature resistance [°C] <i>PE-Norm 059</i> | -40 – 200 |
| Shrinkage [%] <i>PE-Norm 031</i> | <0.5 |
| Water absorption [%] <i>PE-Norm 016</i> | <1 |
| Glass transition temperature - DSC [°C] <i>PE-Norm 009</i> | 150 – 190 |
| Coefficient of thermal expansion [ppm/K] below T _g <i>PE-Norm 017</i> | <40 |
| Coefficient of thermal expansion [ppm/K] above T _g <i>PE-Norm 017</i> | 100 – 140 |
| Thermal conductivity [W/m*K] <i>PE-Norm 062</i> | 0.2 – 0.4 |
| Thermal conductivity [W/m*K] <i>PE-Norm 054</i> | 0.5 – 1.0 |
| Dielectric constant [10kHz] <i>IEC 62631-2-1</i> | 1 – 3 |
| Dielectric strength [kV/mm] <i>DIN EN 60243</i> | 18 – 22 |
| Young's modulus – Tensile test [MPa] <i>150°C, 60min</i> <i>PE-Norm 056</i> | 8,500 – 11,500 |
| Tensile strength [MPa] <i>150°C, 60min</i> <i>PE-Norm 014</i> | 19 – 13 |
| Elongation at break [%] <i>150°C, 60min</i> <i>PE-Norm 014</i> | <1 |

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Transport/Storage/Shelf Life

| Package type | Transport | Storage | Shelf life* |
|-------------------|-----------|---------|------------------------------|
| Syringe/Cartridge | -20°C | -20°C | At delivery max. 3 months |
| Other packages | | | |

***Store in original, unopened containers!**

Instructions for use

Surface preparation

The surfaces to be bonded should be free of dust, oil, grease, mold release, or other contaminants in order to obtain an optimal and reproducible bond. For cleaning we recommend the cleaner IP® from Panacol, or a solution of Isopropyl Alcohol at 90% or higher concentration. Substrates with low surface energy (e.g. polyethylene, polypropylene) must be pretreated in order to achieve sufficient adhesion.

Application

Our products are supplied ready to use. Depending on packaging they can be applied by hand directly from the container or by using compatible dispensing systems and automation. Many commercially available valve and controller options are available to ensure accurate and consistent adhesive dispensing. For assistance with dispensing and curing questions, please contact our Applications Engineering department. To obtain best results, the adhesive and substrates to be bonded may not be cold and should be allowed to warm to room temperature prior to processing. For safety information refer to our Material Safety Data Sheet (MSDS).

Storage

Store uncured product in its original, closed container in a dry location. Any material removed from the original container must not be returned to the container as it could be contaminated. Panacol cannot assume responsibility for products that were improperly stored, contaminated, or repackaged into other containers.

Handling and Clean-up

For safe handling information, consult this product's Material Safety Data Sheet (MSDS) prior to use. Uncured material may be wiped away from surfaces with organic solvents. Do not use solvents to remove material from eyes or skin!

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Disclaimer

The product is free of heavy metals, PFOS and Phthalates and is conform to the current EU-Directive RoHS.

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