

Technical Datasheet

Structalit® 5803



Product Description

Modified epoxy | 2 part | solvent-free | room temperature/heat-curing

- ▶ Bonding and coating of metals and glass
- ▶ Magnet bonding
- ▶ Automotive
- ▶ Good oil, chemical and moisture resistance
- ▶ Impact resistant
- ▶ Low water absorption
- ▶ Very good adhesion to metal
- ▶ Flame classification based on UL 94 HB

Curing Properties

This product is a two-component adhesive. The adhesive can be applied after mixing the two components in their appropriate ratios. All two-component adhesives have a determined pot life. Consideration should be given to the amount of adhesive that is mixed, as it must be applied within the noted pot life for optimal dispensing and assembly.

If static mixers are used, we recommend Quadro mixers with 24 elements to achieve sufficient mixing.

| Volumetric mixing ratio | Pot life |
|-------------------------|----------|
| 2:1 | 17 min |

This adhesive can be cured at room temperature or more rapidly with heat. Typical curing temperatures are listed in the table below.

| Temperatures | Time |
|--------------|--------|
| 25°C | 6 h |
| 80°C | 60 min |

The curing times given are guidelines. They refer to rheological measurements according to PE-Standard 067. The heating times of the parts to be joined are not taken into account.

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 | Chalk |
| Filler - weight [%] | 25 |
| Particle size D95 [µm] | 12.5 |
| Uncured Material | |
| Viscosity mix [mPas] (Kinexus Rheometer, 25 °C, 10s ⁻¹) <i>PE-Standard 064</i> | 100,000 |
| Density [g/cm ³] <i>PE-Standard 004</i> | 1.30 |
| Cured Material | |
| Hardness shore D <i>80°C, 1h</i> <i>PE-Standard 006</i> | 80 |
| Temperature resistance [°C] | -40 – 180 |
| Water absorption [%] <i>80°C, 1h</i> <i>PE-Standard 016</i> | 0.5 |
| Glass transition temperature - DSC [°C] <i>80°C, 1h</i> <i>PE-Standard 009</i> | 120 |
| Coefficient of thermal expansion [ppm/K] below Tg <i>80°C, 1h</i> <i>PE-Standard 017</i> | 57 |
| Coefficient of thermal expansion [ppm/K] above Tg <i>80°C, 1h</i> <i>PE-Standard 017</i> | 139 |
| Young's modulus – Tensile test [MPa] <i>80°C, 1h</i> <i>PE-Standard 056</i> | 4,400 |
| Tensile strength [MPa] <i>80°C, 1h</i> <i>PE-Standard 014</i> | 40 |
| Elongation at break [%] <i>80°C, 1h</i> <i>120°C</i> <i>PE-Standard 014</i> | 7 |
| Lap shear strength (Al2024/Al2024) [MPa] <i>80°C, 1h</i> <i>Sandblasted, RT</i> <i>PE-Standard 068</i> | 34 |

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| Lap shear strength (Al2024/Al2024) [MPa] <i>80°C, 1h</i> <i>Sandblasted, 100°C</i> <i>PE-Standard 068</i> | 16 |
| Lap shear strength (Steel/Steel) [MPa] <i>80°C, 1h</i> <i>Sandblasted, RT</i> <i>PE-Standard 068</i> | 21 |
| Lap shear strength (Steel/Steel) [MPa] <i>80°C, 1h</i> <i>Sandblasted, 100°C</i> <i>PE-Standard 068</i> | 16 |

Transport/Storage/Shelf Life

| Package type | Transport | Storage | Shelf life* |
|-------------------|----------------------------------|----------------------------------|---|
| Syringe/Cartridge | At room temperature max. 25°C | At room temperature max. 25°C | At delivery min. 3 months max. 6 months |
| Other packages | | | |

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

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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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