Technical Datasheet

Structalit® 701

Product Description

Modified epoxy | 2 K | solvent-free | heat-curing

- Medical devices
- Encapsulation of RFID tags
- Bundling of endoscopic fibers
- Light guide embedding
- Very good adhesion to metal (AL, steel, stainless steel) and many plastics
- Simple processing with a long pot life
- Short curing times
- Temperature resistant up to 200°C
- Good chemical resistance
- Certified according to USP Class VI and ISO 10993-5
- Resistant to sterilization

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.

Mixing ratio	Pot life
10:1	6 h

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

Temperatures	Time
80°C	20 min
120°C	5 min
150°C	2 min
200°C	1 min

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	Transparent, amber

Uncured Material	
Viscosity [mPas] mix *(Brookfield LVT, 25 °C, Sp. 3/30 rpm)* *PE-Norm 001*	3,000 – 5,000
Viscosity [mPas] part A *(Brookfield LVT, 25 °C, Sp. 3/30 rpm)* *PE-Norm 001*	10,000 – 20,000
Viscosity [mPas] part B *(Brookfield LVT, 25 °C, Sp. 3/30 rpm)* *PE-Norm 001*	400 – 800
Density [g/cm³] *PE-Norm 004*	1.1 – 1.2
Flash point [°C] *PE-Norm 050*	>100
Refractive index [nD20] *PE-Norm 023*	1.56 – 1.57
Working life [h] *@ room temperature*	6

Cured Material	
Hardness shore D *PE-Norm 006*	80 – 90
Temperature resistance [°C]	-40 – 200
Shrinkage [%] *PE-Norm 031*	<1
Water absorption [%] *PE-Norm 016*	<1

Glass transition temperature - DSC [°C] *PE-Norm 009*	110 – 120
Coefficient of thermal expansion [ppm/K] below Tg *PE-Norm 017*	30 – 70
Coefficient of thermal expansion [ppm/K] above Tg *PE-Norm 017*	200 – 350

Young´s modulus – Tensile test [MPa] *120°C, 20min* *PE-Norm 056*	3,500 – 5,500
Tensile strength [MPa] *120°C, 20min* *PE-Norm 014*	30 – 33
Elongation at break [%] *120°C, 20min* *PE-Norm 014*	1 – 5

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Transport/Storage/Shelf Life

Package type	Transport	Storage	Shelf life*
Syringe/Cartridge	At room temperature max. 25°C	0°C – 10°C	At delivery min. 6 months max. 12 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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