Technical Datasheet
Structalit® 701

Product Description

Panacol Structalit® adhesives are solvent free single or two-component adhesives. They are mostly based on epoxy resin and can be cured at room temperature or by exposure of heat. Structalit® products are designed for bonding, casting and protecting components in electronic and automotive industry.

Structalit® 701 is a two part, thermal curing epoxy adhesive. Structalit® 701 appears amber and transparent in thin layers. Structalit® 701 has good bonding to a wide range of materials including metals (alumina, steel and stainless steel) and many plastics. It provides good application behavior, long pot life and short curing time.

Structalit® 701 has met the requirements for USP Class VI and ISO 10993-5. Structalit® 701 is temperature resistant up to 200 °C and has shown excellent moisture and chemical resistance which makes it suitable for sterilization methods including autoclaving, EtO and gamma irradiation.

Suitability on various substrates

PMMA	*	brass	o	glass	✓	Al	✓
PC	✓	PA	✓	steel	✓	PVC	✓

✓excellent o suitable * pretreatment necessary/recommended

Curing Properties

This product is a two-component adhesive. The adhesive can be cured at room temperature or thermally with the addition of heat after mixing the two components in the ratio indicated. Possible curing temperatures are listed in the table below.

Thermal curing	[min]
Time at 80°C	20
Time at 120°C	5
Time at 150°C	2
Time at 200°C	1

The adhesive can be applied after mixing the components within the pot life. To determine the pot life of the time of the double increase in viscosity after mixing of the two components is used.

Curing	
Pot life	6 h
Mixing ratio	10:1

The curing times given are guidelines. They refer to the curing of 2 g of adhesive. The heating up of the joining members are not taken into account.

The final strength of the adhesive is reached at the earliest after 24 h.

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Technical Data

Resin	epoxy
Appearance	transparent, amber

Uncured material

Viscosity mix [mPas] (Brookfield LVT, 25°C) *PE-Norm 001*	3 000 - 5 000
Viscosity part A [mPas] (Brookfield LVT, 25°C, Sp 4, 12rpm) *PE-Norm 001*	10 000 - 20 000
Viscosity part B [mPas] (Brookfield LVT, 25°C, Sp 2, 30rpm) *PE-Norm 001*	400 - 800
Density [g/cm³] *PE-Norm 004*	1,17
Flash point [°C] *PE-Norm 050*	>100

Cured material

Hardness shore D *PE-Norm 006*	80 - 90
Temperature resistance [°C] *PE-Norm 065*	-40 - 200
Shrinkage [%] *PE-Norm 031*	0,5
Water absorption [mass %] *PE-Norm 016*	0,5

Glass transition temperature DSC [°C] *PE-Norm 009*	110 - 120
Coefficient of linear expansion [ppm/K] below Tg *PE-Norm 017*	50,0
Coefficient of linear expansion [ppm/K] above Tg *PE-Norm 017*	230,0

Young's modulus E [MPa] *PE-Norm 056*	4 300

Transport/Storage/Shelf Life

Trading unit	Transport	Storage	Shelf-life*
Cartridge	at room temperature max. 25°C	at room temperature max. 25°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 or other dirt in order to obtain an optimal and reproducible bond.

For cleaning we recommend the cleaner IP® Panacol. 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 semi or fully automatically. With automated application from the cartridge the adhesive is conveyed by a compressed air-operated displacement plunger via a valve in the needle. When metering low viscosity materials from bottles the adhesive is transported by a diaphragm valve. If help is required, please contact our application engineering department.

Adhesive and substrate may not be cold and must be warmed up to room temperature prior to processing.

For safety information refer to our safety data sheet.

Note

The product is free of heavy metals, PFOS and Phthalates and is conform to the EU-Directive 2011/65/EU "RoHS II" .

Our data sheets have been compiled to the best of our knowledge. The enclosed information describes characteristic properties, with no declaration of commitment. We recommend trials in order to confirm that our products satisfy the particular application requirements. For any additional technical support, please contact our application engineering department. For warranty claims, please refer to our standard terms and conditions.

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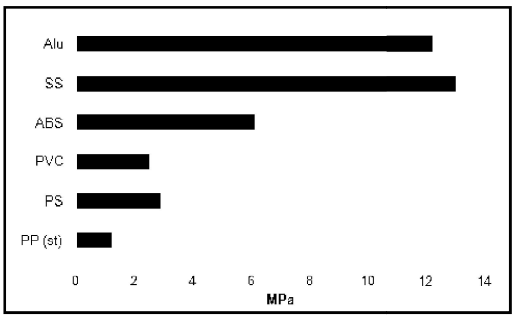
Appendix

Environmental Resistance

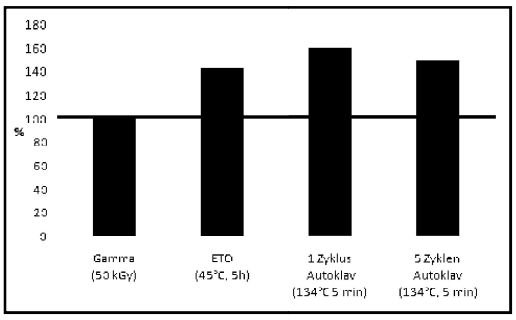
The table below shows the tensile shear strength of Al/Al bonding after chemical and environmental exposure. The adhesive was cured 20 minutes at 80 °C.

% of initial value		
Method	24 h	170 h
Isopropanol, 21 °C	100	-
Water, 21 °C	-	101

Lab shear strength [MPa]



Sterilization



The diagram above shows the tensile shear strength of Al/Al bonding after sterilization expressed as % from the initial value. The specimens were cured by exposure to 80 °C for approximately 20 min.

Structalit® 701 shows excellent bond strength retention after sterilization by autolaving, EtO and gamma irradiation. Generally the resistance depends on the substrate material, the curing parameters and the process of sterilization. It remains the user´s obligation to determine the effect of sterilization on the specific procduct.