Structalit® 701

Product Description

Structalit® 701 is a two part, thermal curing epoxy adhesive. The product 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 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.

Curing

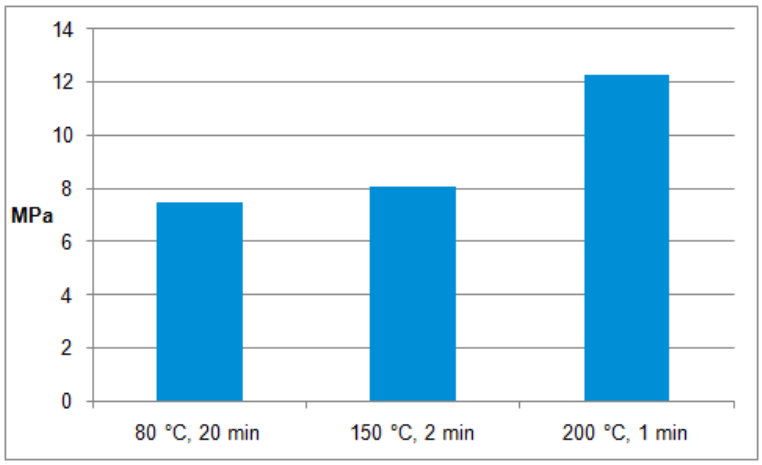
Structalit® 701 is a two part epoxy with a mixing ratio of 10:1 (A:B). It provides a pot life of approximately 6 hours stored at 20 °C. Big amount of Material as well as higher temperatures accelerate the curing and decrease the pot life. Increased curing properties are developed after 24 hours.

Recommended curing conditions

20	minutes at	80 °C
5	minutes at	120 °C
2	minutes at	150 °C
1	minutes at	200 °C

The curing properties influence the bonding strength and the intensity of the color of the adhesive. High temperatures increase the intensity of the color. We recommend testing the best curing conditions for your product.

The chart below shows the tensile shear strength of Al/Al bonding depending on curing conditions.



Technical Data

Base	epoxy
Curing	two part, thermal
Appearance	transparent, amber

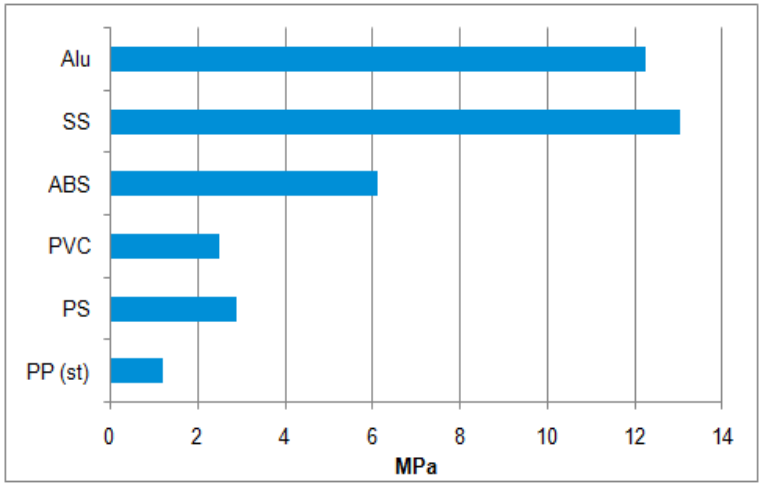
Uncured Material

Viscosity (mixed) [mPa] (Bohlin, 25 °C, cp 4°/20 mm)	3,000 - 5,000
Density [g/cm³] PE-Norm 004	1.17
Flash Point [°C]	> 100

Cured Material

Glass Transition Temperature DSC [°C] PE-Norm 009	110 - 120
Hardness Shore D PE-Norm 006	80 - 90
Coefficient of Linear Expansion below T_g PE-Norm 017	50
Coefficient of Linear Expansion above T_g PE-Norm 017	230
Water Absorption [%] PE-Norm 016	< 0.5
Linear Shrinkage [%] PE-Norm 031	< 0.5
Recommended Service Temperature [°C]	-40 - 200

Tensile Shear Strength [MPa]
PE-Norm 013



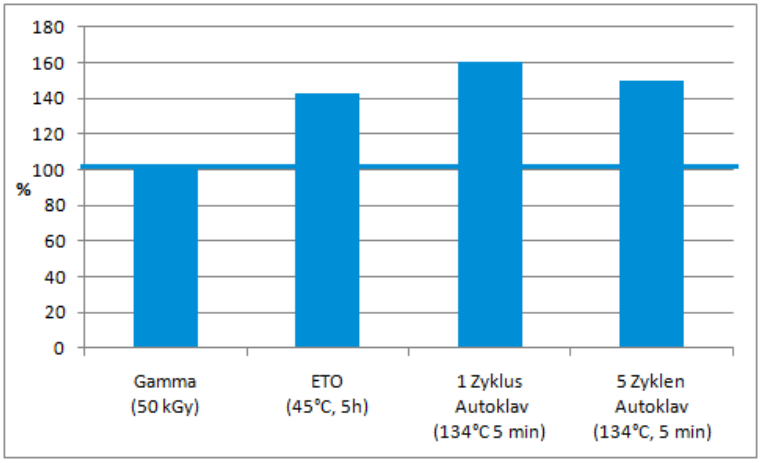
Environmental Resistance

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 strength		
Method	**24 h**	**170 h**
Isopropanol, 21 °C	100	-
Water, 21 °C	-	101

Sterilization

The diagram below 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.

Storage and Shelf life

The product can be stored for 6 month at 7 °C to 25 °C in unopened containers. Store under dry and dark conditions only.

Packaging Unit

Standard packaging units of 5 g bi-pack or 1,1 kg are available.

Instructions for Use

Surface Preparation

The surfaces to be bonded should be clean and free from oil and grease. Lightly soiled surfaces can be cleaned with our cleaner IP®. Substrates with low surface energy (such as polyethylene and polypropylene) need to be pretreated.

Application

Our products are supplied ready for use. They can be applied manually from the cartriges or automatically with air-operated dosing devices (catridge/piston combination). Depending on the amount of adhesive to be used, different valves are availabe. Substrate and adhesive should be preconditioned to room temperature bevor bonding.

Using bi-packs remove the clip and mix both componentes together. The adhesive can be dispensed directly from the plastic bag.

The two parts must be mixed in the precise ratio. Imprecise measuring and mixing prevents the epoxy resin from solidifying or curing.

Note

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 an additional technical consultation, please contact our R&D department. In general, for warranty claims, please refer to our standard terms and conditions.