

GP 49

2K-EP-CONSTRUCTION ADHESIVE

GP49 is a viscoplastic two-component construction adhesive based on epoxy resin that cures at room temperature. It was developed for the bonding of metals, plastics such as ABS, PVC-hard, PC, PMMA and fibre composites as well as other materials.



OVERVIEW

- viscoplastic
- high strength
- temperature resistance up to 120 °C
- water-resistant
- age-resistant
- weather resistant
- fast and easy processing
- thixotropic

PHYSICAL SPECIFICATIONS				
Composition		GP 49 B RESIN	GP 49 A HARDENER	GP 49 MIXTURE
Mixing ratio by weight		2	1	
Mixing ratio by volume at 25 °C		2	1	
Base		mod. epoxy resin	mod. Polyamine	
Colour		black	beige	black
Operating temperature range	°C			-55 up to +120
Viscosity (at RT) *, **	mPa·s	520.000	100.000	approx. 300.000
Density *	g/cm ³	1.0	1.0	1.0
Open time	min			90
Processing time	h			4–6
Curing				7 days at 23 °C 1 day at 23 °C + 1 h at 80 °C 2 h at 65 °C

* Average values

** Brookfield RVF, spindle 6, 10 Upm

THERMAL AND MECHANICAL SPECIFICATIONS

Roll peel strength (DIN 53289)

Curing			
Test temperature	7 days at 23 °C	2 h at 65 °C	24 h at 23 °C +1 h at 80 °C
-55 °C	--	--	--
23 °C	160 N/25 mm	185 N/25 mm	130 N/25 mm
80 °C	--	--	--
23 °C			
- after 30 minutes at 80 °C	--	--	170 N/25 mm
- after 30 minutes at 120 °C	230 N/25 mm	210 N/25 mm	205 N/25 mm

Tensile shear strength (DIN 53283)

Curing			
Test temperature	7 days at 23 °C	2 h at 65 °C	24 h at 23 °C +1 h at 80 °C
-55 °C	17 MPa	24 MPa	24 MPa
23 °C	26 MPa	30 MPa	30 MPa
80 °C	12 MPa	12 MPa	13 MPa
120 °C	2 MPa	2 MPa	2 MPa

Surface pretreatment: AL-corroded

Tensile shear strength on plastics

Material	
ABS (filled)	3 MPa**
PVC (filled)	3 MPa**
PC, glass filled	3 MPa***
PET, glass filled	2 MPa***
PMMA	4 MPa***
PPO, glass filled	5 MPa***
<u>fibre component materials:</u>	
- Carbon fiber-epoxy resin	36 MPa*
- glass fiber-epoxy resin	30 MPa*
- SMC-polyester	4 MPa**

* Break in the material

** Cohesive failure

*** Adhesive failure

Curing: 7 days at RT, test temperature: 23 °C

All materials cleaned with solvent

Aging data

Storage	Tensile shear strength
Control value	26 MPa
30 days water, 23 °C	27 MPa
30 days jet fuel JP4, 23 °C	29 MPa
30 days Skydrol 500 B, 23 °C	28 MPa
30 days hydraulic oil, 23 °C	30 MPa
30 days 120 °C	25 MPa
30 days 175 °C	22 MPa
30 days 50 °C / 95 % r. F.	30 MPa

Curing: 7 days at 23 °C, test temperature: 23 °C

PROCESSING INSTRUCTIONS

The most favourable processing temperature for construction adhesive and material ranges between 20 and 25 °C.

Optimal strength is obtained with adhesive layer thicknesses of 0.05-0.15 mm.

A uniform adhesive layer thickness can be ensured by inserting appropriate spacers, like e. g. glass fibers. The parts are joined and positioned/fixed for the curing.

PREPARING PROCESS FOR BONDING

The surfaces must be dry, free of dust, oil, release agents and other contaminations.

The kind of the surface pretreatment depends on the respective requirement profile (firmness, aging etc.).

For most applications pre-treatments are normally sufficient, which result in a closed water film at the surface on metals.

Both for metallic and non-metallic materials a mechanical surface pretreatment with grinding fleece (Art. No. 3m7447) is recommended, which is supported by a pre- and post-cleaning with material-compatible solvents.

FORM OF DELIVERY

Description	PU	Inclusive static mixer	Article number
Double chamber syringe 10 g	1 piece	–	gp49010sp
50 ml cartridge	1 piece 6 pieces in box	GPQ 05-20 GPQ 05-20	gp49050kt.01 gp49050kt.06
200 ml cartridge	1 piece 6 pieces in box	GPH 07-18 G GPH 07-18 G	gp49200kt.01 gp49200kt.06
400 ml cartridge	1 piece 6 pieces in box	GPH 07-18 G GPH 07-18 G	gp49400kt.01 gp49400kt.06
GP 49 BA KIT	Pack/1 l Resin/B = 666 ml; hardener/A = 333 ml		gp49ab

PROCESSING EQUIPMENT

Description	Article number
Hand Gun GP 1:2 50 ml Static Mixer GPQ 05-20	1h050gp2 1gpp05-20
Hand Gun 1:1/1:2 200 ml manual Static Mixer GPH 07-18 G	1h200gpm1 1gph07-18G
Hand Gun 1:1/1:2 DM 400 ml manual Hand Gun 1:2 400 ml manual Hand Gun 1:1/1:2 DP 400 ml pneumatic Static Mixer GPH 07-18 G	1h400dm1 1h400gpm2 1h400dp1 1gph07-18G

HANDLING PRECAUTIONS

Gössl + Pfaff GmbH products can be processed without danger, provided that the precautionary measures usual in handling chemicals are kept.

Unhardened materials are to be kept away from food. In order to avoid allergic reactions, it is urgently recommended to wear impermeable rubber or plastic gloves and eye protection.

After each working day hands must be thoroughly washed with warm water and soap.

The use of solvents should be avoided. Afterwards the skin should be dried with disposable paper towels – no textiles.

The work space should be well ventilated; maybe suction device above work space.

For further information, please consult the product safety data sheet.

Safety data sheets are deposited on our Homepage under www.goessl-pfaff.de with the respective product.

STORAGE

GP 49 can be stored dry at 15 to 25 °C in their original containers. The expiry date is indicated on the product label.

INFORMATION

The information contained in this technical data sheet result from research and tests conducted in our Laboratories under precise conditions. It is the responsibility of the user to determine the suitability of Gößl + Pfaff GmbH products, under their own conditions before commencing with the proposed application. Gößl + Pfaff GmbH guarantee the conformity of their products with their specifications but cannot guarantee the compatibility of a product with any particular application. Gößl + Pfaff GmbH disclaim all responsibility for damage from any incident which results from the use of these products. The responsibility of Gößl + Pfaff GmbH is strictly limited to reimbursement or replacement of products which do not comply with the published specifications.