FIBREGLAST™

MGS BP-10

Fibre Glast Developments Corporation
385 Carr Drive
Brookville, Ohio 45309
Phone: 800.214.8572
Fax: 937.833.6555
www.fibreglast.com

Resin MGS BPR10
Curing Agent MGS BPH10

BP10 is a solvent-free epoxy-based bonding paste which was specifically developed for fast setting bondings in composites applications and for bondings of composites and metal.

BP10 has a good degree of cure even at lower ambient temperatures. To achieve full mechanical properties and thermal resistance, post-curing of at least 3h 60°C is recommended. However, good mechanical properties are already developed after initial curing of 24h RT.

Surface Preparation

No special surface preparation is required, but bonding surfaces should be dry and free from grease. Priming with bonding paste is not recommended and should be avoided.

Applying & Curing

Standard packaging of BP10 is a 400ml SBS (side by side) cartridge, which facilitates easy and accurate application. The cartridges are also an ideal solution for repairs of bondings in production and in operational environments.

The resin and curing agent components are strongly colored to make identification of homogenous mixing possible, especially at the very beginning of the mixing process. BP10 is only to be used with the supplied static mixers which provide good mixing and low loss of pressure. The tip of the mixing nozzle can be cut to adjust the flow rate.

Recommended application process:

- Before use, cartridge should be 20-25 degrees C.
- Remove cap nut and plug.
- Squeeze out material until hardener and resin are on same level.
- Attach mixer and secure with cap nut.
- Reject the first 5-15 grams until color is homogenous.

Open time and processing times must be checked with the required bonding geometry, surface and environmental temperatures, humidity and peel ply in production. The recommended temperature for application is between 15 and 23°C. Higher temperatures are possible, but will shorten pot life. A temperature increase of 10°C will halve the pot life. At low temperatures reactivity is low, but viscosity will increase.

Storage

Recommended storage is at temperatures between 15-23 °C without exposure to direct sunlight. Please note that exposure to sun light, especially over longer time, can lead to color changes especially for the curing agent. This color change, however, has no known effect on the processing and final properties of the product. BP10 shows no tendency to crystallize, but lower temperatures will make processing more difficult. In originally packed and closed cartridges, the materials have a shelf life of minimum 4 years.

Due to selected raw materials, minimal problems concerning skin irritation and allergies during processing are expected. The relevant industrial safety regulations for the handling of epoxy resins and hardeners are to be observed.

FIBREGLAST™

MGS BP-10

Fibre Glast Developments Corporation
385 Carr Drive
Brookville, Ohio 45309
Phone: 800.214.8572
Fax: 937.833.6555
www.fibreglast.com

TYPICAL PROPERTIES

Property	Unit	Resin BPR20	Curing Agent BPH20
Color		Yellow	Blueish - Green
Density [1]	g/cm^3	1.21	1.14
Viscosity [2]	Pa-s	20	70
Mixed Density [1]	g/cm^3	1.17	
Gel time [3]	min	-	
Pot life [4]	min	8	
Ultimate T_G [5]	°C	> 82	

These are typical values and should not be construed as specifications.

Measuring conditions:

1. Measured at 23°C
2. Measured at 25°C, rotational viscometer, shear rate 50 s^{-1}, plate 25mm, gap 0.5mm
3. Measured at 20°C, rotational viscometer, oscillating measurement, gap 5mm
4. 100g mixture of BPR 20 and curing agent in water bath at 30°C
   Pot life is a standardized lab test under fixed conditions which does not necessarily reflect real process conditions.
5. DSC, midpoint, 20K/min

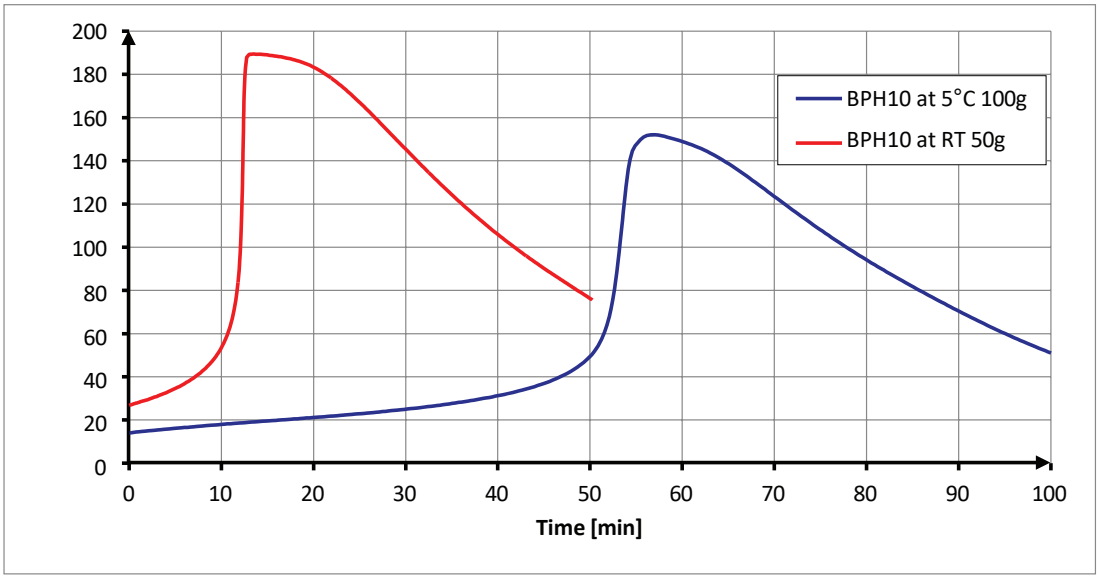
MIXING RATIO

	Parts curing agent BPH20 per 100 parts resin BPR20
Parts by weight	46 ± 2
Parts by volume	50 ± 2

MGS BP-10

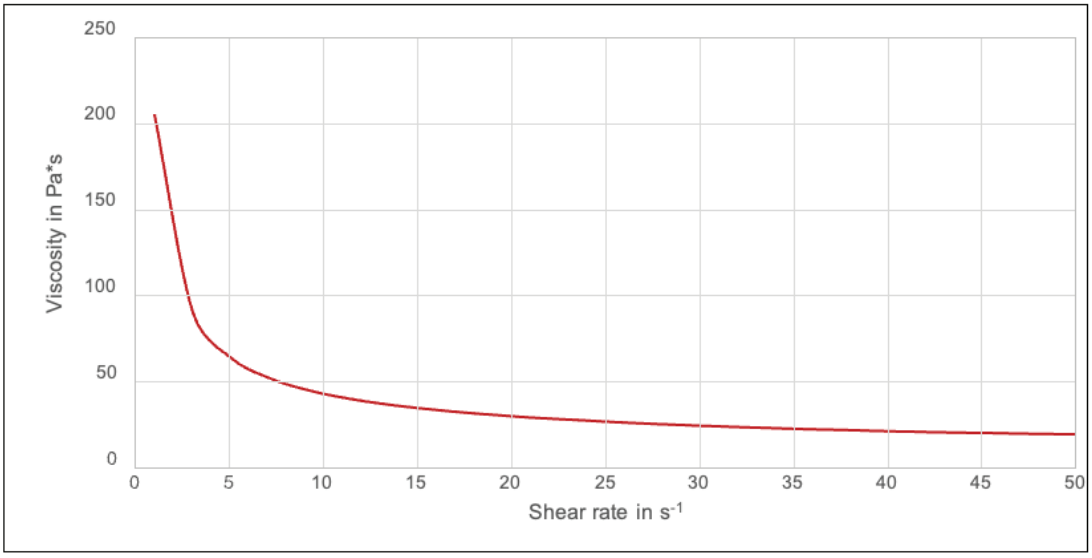
Fibre Glast Developments Corporation
385 Carr Drive
Brookville, Ohio 45309
Phone: 800.214.8572
Fax: 937.833.6555
www.fibreglast.com

TEMPERATURE DEVELOPMENT



Measuring conditions: 100g mixture conditioned at 5°C and measured in climate chamber at 5°C 50g mixture conditioned at RT and measured in fume hood at RT

VISCOSITY



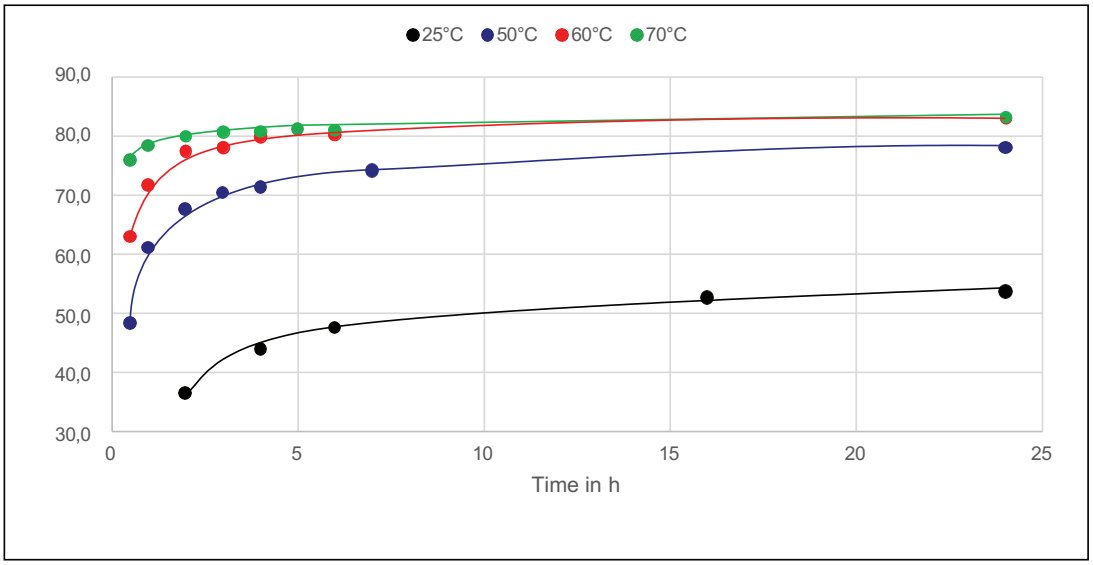
Measuring conditions: Rotational viscometer, 25mm plate, gap 0.5mm

FIBREGLAST™

MGS BP-10

Fibre Glast Developments Corporation
385 Carr Drive
Brookville, Ohio 45309
Phone: 800.214.8572
Fax: 937.833.6555
www.fibreglast.com

T_G DEVELOPMENT



Measuring conditions: DSC-measuring heat rate: 20°C/min, sample mass 10-20 mg

MECHANICAL DATA

Single lap shear test [1] DIN EN ISO 1465	**Bond line [mm]**	0.5	3.0
	Lap Shear Strength[1] **[MPa]**	~ 26	~ 15
Peel strength DIN EN ISO 11339	> 2 N/mm		
Tensile test [2] DIN EN ISO 527-2	**Tensile strength [MPa]**	~ 72	
	Tensile modulus [GPa]	~ 4.4	
	Tensile strain at break [2] **[%]**	~ 2.6	
All specimens cured 5h 80°C			

These are typical values and should not be construed as specifications.

Measuring conditions:

1. Lap shear Strength strongly depends on specimen configuration, especially laminate thickness
2. Tensile strain at break results strongly depends on specimen quality, especially void content
   All tests accomplished at standard climate