

Biresin® CR132

Composite resin system

Product Description

Biresin® CR132 is an epoxy resin system suitable for the production of high performance fibre reinforced composite parts and moulds with thermal properties up to approx. 135°C

Application Areas

Biresin® CR132 is especially suited to the hand lay-up, pultrusion and filament winding processes and can be used in general industrial composites and in composite tooling where higher thermal resistance is needed.

Features / Advantages

- 3 hardeners (B) give a wide range of processing times
- Good impregnation and good non-draining properties due to optimized mixed viscosity
- Glass transition temperatures up to approx. 135°C dependent on curing conditions
- Hardeners (B) are pigmented blue to assist in mixing and to help see where has been laminated

Physical Data		Resin (A)		Hardener (B)	
Individual Components		Biresin® CR132	Biresin® CH132-2	Biresin® CH132-5	Biresin® CH132-7
Mixing Ratio, parts by	Weight	100	28	28	32
Mixing Ratio, parts by	Volume	100	34	34	39
Colour		translucent	blue		
Viscosity, 25°C	mPa.s	~1,900	<10	~20	~30
Density, 25°C	g/ml	1.14	0.95	0.93	0.93
		Mixture			
Potlife, 100 g / RT, approx. values		min	60	150	210
Mixed viscosity, 25°C, approx. values		mPa.s	~360	~600	~550

Processing

- The material and processing temperatures should be in the range 18 - 35°C.
- The mixing ratio must be followed accurately to obtain best results. Deviating from the correct mix ratio will lead to lower performance.
- Before demoulding precuring of at least 2 h at 60°C is recommended.
- The final mechanical and thermal values are dependent on the applied postcuring cycles.
- It is recommended to clean brushes or tools immediately after use with Sika Reinigungsmittel 5.
- Additional information is available in "Processing Instructions for Composite Resins".

Thermal Data, neat resin specimen (approx. values after 8 h / 125°C)

Biresin® CR132 resin (A)		with hardener (B)	Biresin® CH132-2	Biresin® CH132-5	Biresin® CH132-7
Heat distortion temperature	ISO 75A	°C	118	136	130
Glass transition temperature	ISO 11357	°C	130	135	135

Typical Mechanical Properties of Fully Cured Neat Resin					
Biresin® CR132 resin (A)	with hardener (B)		Biresin® CH132-2	Biresin® CH132-5	Biresin® CH132-7
Tensile strength	ISO 527	MPa	83	77	78
Tensile E-Modulus	ISO 527	MPa	2,700	2,650	2,450
Elongation at break	ISO 527	%	6.6	4.6	5.7
Flexural strength	ISO 178	MPa	125	115	114
Flexural E-Modulus	ISO 178	MPa	2,750	2,750	2,700
Compressive strength	ISO 604	MPa	109	118	115
Shore hardness	ISO 868	-	D 87	D 87	D 86
Impact resistance	ISO 179	kJ/m ²	47	32	33

Postcuring

The suitable cure cycle and the attainable mechanical and thermal values depend on various factors, such as laminate thickness, fibre volume, reactivity of the resin system etc.

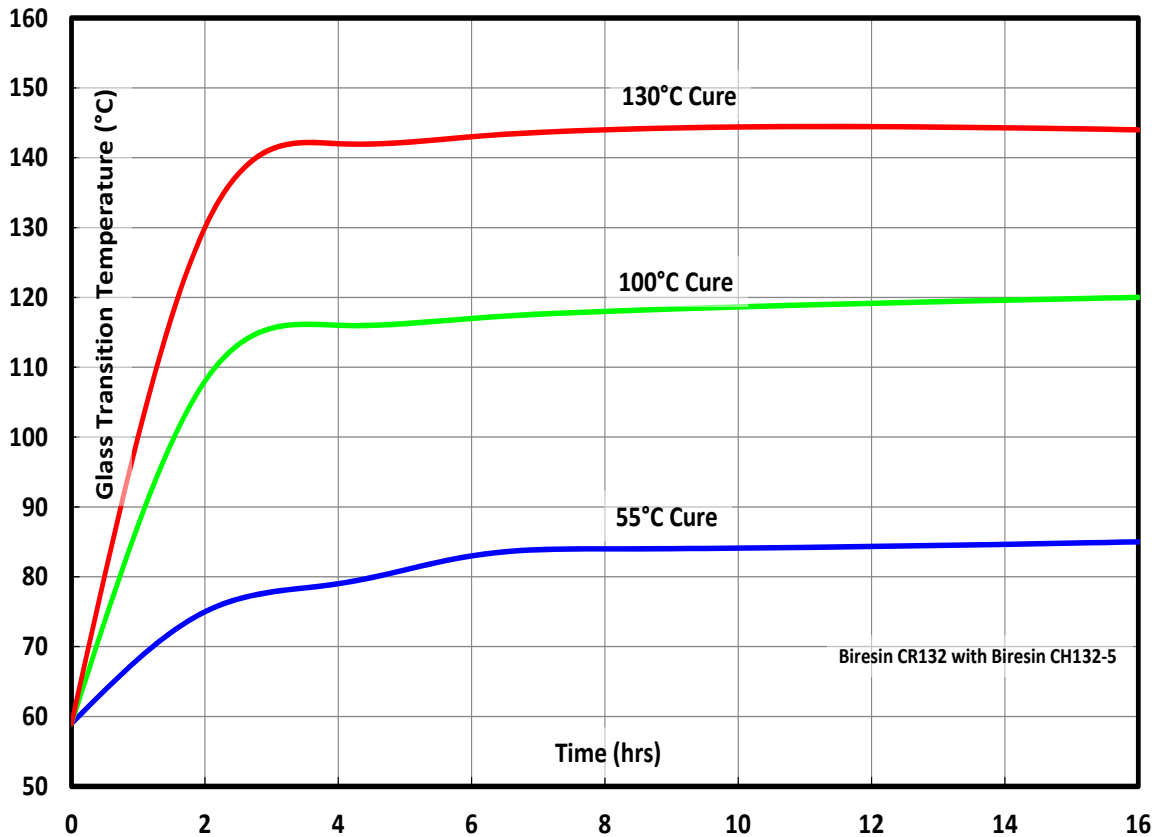
An appropriate cure cycle could look as follows:

- Heat-up rate of ca. 0.2°C/Minute until approx. 10°C below the required glass transition temperature (T_g)
- Followed by a dwell at that temperature of between 2 and 12 hours.
- Part(s) should then be cooled at ~0.5°C per minute

The specific postcure should be adapted to the required technical and economic requirements.

To measure the mechanical performance of the resin system a Sika Advanced Resins standard cycle is used to ensure that the full T_g potential of the system in question is reached.

Glass Transition Temperature vs. Cure Cycle



Packaging (net weight, kg)				
Biresin® CR132 resin (A)	1,000	200	15	10
Biresin® CH132-2 hardener (B), (blue)				2.8
Biresin® CH132-5 hardener, (B), (blue)	900	180		2.8
Biresin® CH132-7 hardener (B), (blue)		180		3.2

Storage

- Minimum shelf life of Biresin® CR132 resin (A) is 24 month and that of hardeners (B) Biresin® CH132-2, CH132-5 and CH132-7 is 12 month under room conditions (18 - 25°C), when stored in original unopened containers.
- After prolonged storage at low temperature, crystallisation of resin (A) may occur. This is easily removed by warming up for a sufficient time to a minimum of 60°C.
- Containers must be closed tightly immediately after use. The residual material needs to be used up as soon as possible.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety related data.

Disposal considerations

Product Recommendations: Must be disposed of in a special waste disposal unit in accordance with the corresponding regulations.

Packaging Recommendations: Completely emptied packagings can be given for recycling. Packaging that cannot be cleaned should be disposed of as product waste.

Source of Data

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Legal Notice

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