

Biresin[®] CR84

Composite resin system

Product Description

The Biresin[®] CR84 system is a lightly thickened epoxy resin system having a pot-life up-to 10 hours and a reduced tendency to drip or spray from reinforcing fibres during processing. The resin system can be fully cured at 80°C

Application Areas

Biresin[®] CR84 resin (A) with Biresin[®] CH84-20 hardener (B) is especially suited to the filament winding process due to its very long open time. It can also be used in hand lay-up where long working time and minimal resin run out is needed. Biresin[®] CR84 system can be used in the general industrial and marine composite areas.

Features / Advantages

- Long pot life enables winding of large structures in one pass
- Due to the very long potlife of the system the impregnation bath requires less filling and cleaning
- Thixotropic nature reduces dripping or spray from impregnated fibres, also reduces mess and waste.
- The system is DNV GL approved. Certificate No. TAK00001AA
- Particularly good for applications where curing temperatures cannot be >75°C

Physical Data		Resin (A)	Hardener (B)
Individual Components		Biresin[®] CR84	Biresin[®] CH84-20
Mixing Ratio, parts by	Weight	100	30
Mixing Ratio, parts by	Volume	100	37
Colour		translucent	colourless to yellowish
Viscosity, 25°C	mPa.s	~4,450	<10
Density, 25°C	g/ml	1.15	0.94
		Mixture	
Potlife, 100 g / RT, approx. values	hr	10	
Mixed viscosity, 25°C, approx. values	mPa.s	575	

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.
- 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".

Typical Thermal Properties of Fully Cured Neat Resin

Biresin [®] CR84 resin (A)		with Biresin [®] CH84-20 hardener (B)	
Heat distortion temperature	ISO 75A °C	86	
Glass transition temperature	ISO 11357 °C	94	

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

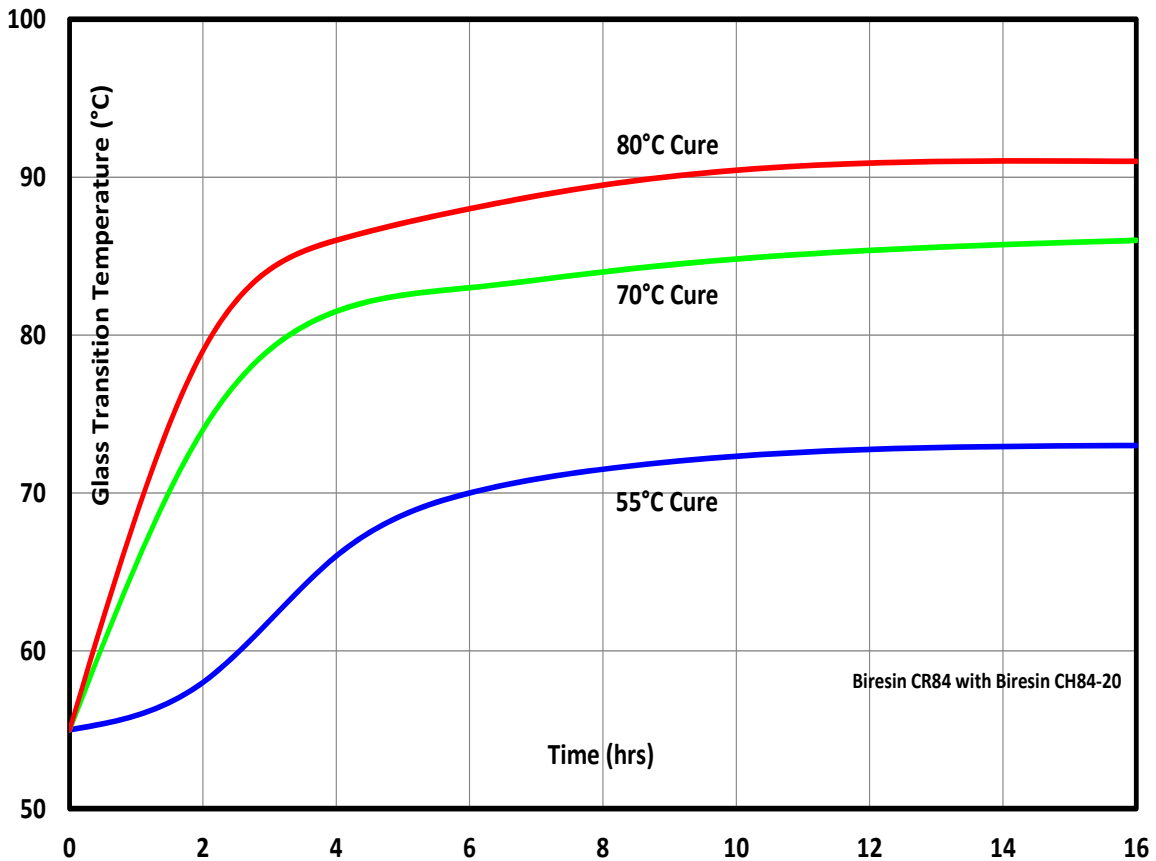
The specific postcure should be adapted to the required technical and economic requirements.

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.

Typical Mechanical Properties of Fully Cured Neat Resin

Biresin® CR84 resin (A)		with Biresin® CH84-20 hardener (B)	
Tensile strength	ISO 527	MPa	89
Tensile E-Modulus	ISO 527	MPa	3,550
Elongation at break	ISO 527	%	5.7
Flexural strength	ISO 178	MPa	124
Flexural E-Modulus	ISO 178	MPa	3,250
Compressive strength	ISO 604	MPa	104
Density	ISO 1183	g/cm ³	1.15
Shore hardness	ISO 868	-	D 85
Impact resistance	ISO 179	kJ/m ²	76

Glass Transition Temperature vs. Cure Cycle



Packaging (net weight, kg)

Biresin® CR84 resin (A)	1,000	200	10
Biresin® CH84-20 hardener (B)		180	3

Storage

- Minimum shelf life of Biresin® CR84 resin (A) is 24 month and of Biresin® CH84-20 hardener (B) 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 at 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.

Value Bases

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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Further information available at:

Sika Deutschland GmbH

Subsidiary Bad Urach

Stuttgarter Str. 139

D - 72574 Bad Urach

Germany

Tel: +49 (0) 7125 940 492

Fax: +49 (0) 7125 940 401

Email: tooling@de.sika.com

Internet: www.sika.com

