

Biresin® CR131 with Biresin® CH135-4/CH135-8/CH172-6 Composite resin system

Product Description

Biresin® CR131 (A) with hardeners (B) CH135-4/CH135-8/CH172-6 can be used in many areas including composite mouldmaking and in general industrial composites.

Application Areas

Biresin® CR131 with hardeners (B) CH135-4/CH135-8/CH172-6 is an epoxy resin system designed for infusion and injection processes, especially for applications where high thermal resistance is needed.

Features / Advantages

- Fast wetting of dry fabrics and nonwovens is possible due to optimized mixed viscosity
- Glass transition temperatures up to approx. 150°C
- 3 different hardeners

Processing		Resin (A)		Hardener (B)	
Individual Components		Biresin® CR131	Biresin® CH135-4	Biresin® CH135-8	Biresin® CH172-6
Mixing Ratio, parts by	Weight	100	26	21	19
Mixing Ratio, parts by	Volume	100	33	26	23
Colour		translucent	colourless to yellow	colourless - transparent	colourless - transparent
Viscosity, 25°C	mPa.s	~1,800	~20	~10	~10
Density, 25°C	g/ml	1.16	0.92	0.94	0.94
		Mixture			
Potlife 100 g / RT, approx values		min	160	260	220
Mixed viscosity, 25°C, approx. values		mPa.s	540	360	360

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

Biresin® CR131 resin (A)		with hardener (B) Biresin®	CH135-4	CH135-8	CH172-6
Curing conditions			8h / 125°C	8h / 140°C	8h / 140°C
Heat distortion temperature	ISO 75B	°C	137	138	146
Glass transition temperature	ISO 11357	°C	138	138	150

Typical Mechanical Properties of Fully Cured Neat Resin					
Biresin® CR131 resin (A)	with hardener (B) Biresin®		CH135-4	CH135-8	CH172-6
Curing conditions			8 h / 125°C	8 h / 140°C	8 h / 140°C
Tensile strength	ISO 527	MPa	89	89	87
Tensile E-Modulus	ISO 527	MPa	2.750	2.750	2.800
Elongation at break	ISO 527	%	5.7	6.3	5.0
Flexural strength	ISO 178	MPa	133	129	137
Flexural E-Modulus	ISO 178	MPa	2,900	2,850	3,000
Compressive strength	ISO 604	N/mm ²	120	120	126
Density	ISO 1183	g/cm ³	1.15	1.17	1.18
Shore hardness	ISO 868	-	D86	D86	D88
Impact resistance	ISO 179	kJ/m ²	27	29	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 can 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.

Packaging (net weight, kg)

Biresin® CR131 resin (A)	1,000	200		10
Biresin® CH135-4 hardener (B)	850	180	26	3
Biresin® CH135-8 hardener (B)	850	180		2.1
Biresin® CH172-6 hardener (B)	900	180		1.9

Storage

- Minimum shelf life of Biresin® CR131 resin (A) is 24 month and of hardeners (B), Biresin® CH135-4, CH135-8 and CH172-6 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.

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.

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Further information available at:

Sika Deutschland GmbH
Subsidiary Bad Urach Tel: +49 (0) 7125 940 492
Stuttgarter Str. 139 Fax: +49 (0) 7125 940 401
D - 72574 Bad Urach Email: tooling@de.sika.com
Germany Internet: www.sikaadvancedresins.com

