Biresin® CR132 FR
Composite resin system

Product Description

Biresin® CR132 FR is a filled epoxy resin system suitable for the production of fire retardant high performance fibre reinforced composites with thermal properties up to approx. 157°C

Application Areas

Biresin® CR132 FR is especially suited for the hand lay-up process and can be used in the general industrial composite and tooling where higher thermal resistance and fire retardance are needed.

Features / Advantages

- Flame retardant: UL94 V-0 Classification (see attachment)
- 4 different hardeners (B) give a wide range of processing times
- Good impregnation and good non-draining properties due to optimized mixed viscosity for hand lay-up
- Glass transition temperatures up to approx. 157°C dependent on curing conditions

Physical Data		**Resin (A)**	**Hardener (B)**			
Individual Components		**Biresin® CR132 FR**	**Biresin® CH132-2**	**Biresin® CH132-5**	**Biresin® CH132-7**	**Biresin® CH122-9**
Mixing Ratio, parts by **Weight**		100	20	20	23	28
Mixing Ratio, parts by **Volume**		100	27	27	31	38
Colour		white	blue			
Viscosity, 25°C	mPa.s	~5,000	~20	~25	~30	~120
Density, 25°C	g/ml	1.26	0.94	0.93	0.93	0,94
			Mixture			
Potlife, 100 g / RT, approx. values	min		60	160	200	460
Mixed viscosity, 25°C, approx. values	mPa.s		1,300	2,100	1,900	2,100

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”.

Typical Thermal Properties of Neat Resin after 8 h / 125°C						
Biresin® CR132 FR resin (A) with hardener (B) **Biresin®**			**CH132-2**	**CH132-5**	**CH132-7**	**CH122-9***
Heat distortion temperature	ISO 75B	°C	~129	~137	~128	~155
Glass transition temperature	ISO 11357	°C	~132	~142	~133	~157

*With Biresin CH 122-9, cured for 8 h / 140 °C

Mechanical Data, neat resin specimen after 8 h / 125°C

Biresin® CR132 FR resin (A) with hardener (B) **Biresin®**			**CH132-2**	**CH132-5**	**CH132-7**	**CH122-9***
Tensile strength	ISO 527	MPa	52	43	42	48
Tensile E-Modulus	ISO 527	MPa	3,600	3,600	3,500	3,100
Elongation at break	ISO 527	%	1.6	1.4	1.4	1.8
Flexural strength	ISO 178	MPa	78	70	67	98
Flexural E-Modulus	ISO 178	MPa	4,000	3,900	3,800	3,550
Compressive strength	ISO 604	MPa	124	123	117	127
Density	ISO 1183	g/cm³	1.24	1.24	1.24	1.21
Impact resistance	ISO 179	kJ/m²	13	10	12	15

*With Biresin CH 122-9, cured for 8 h / 140 °C

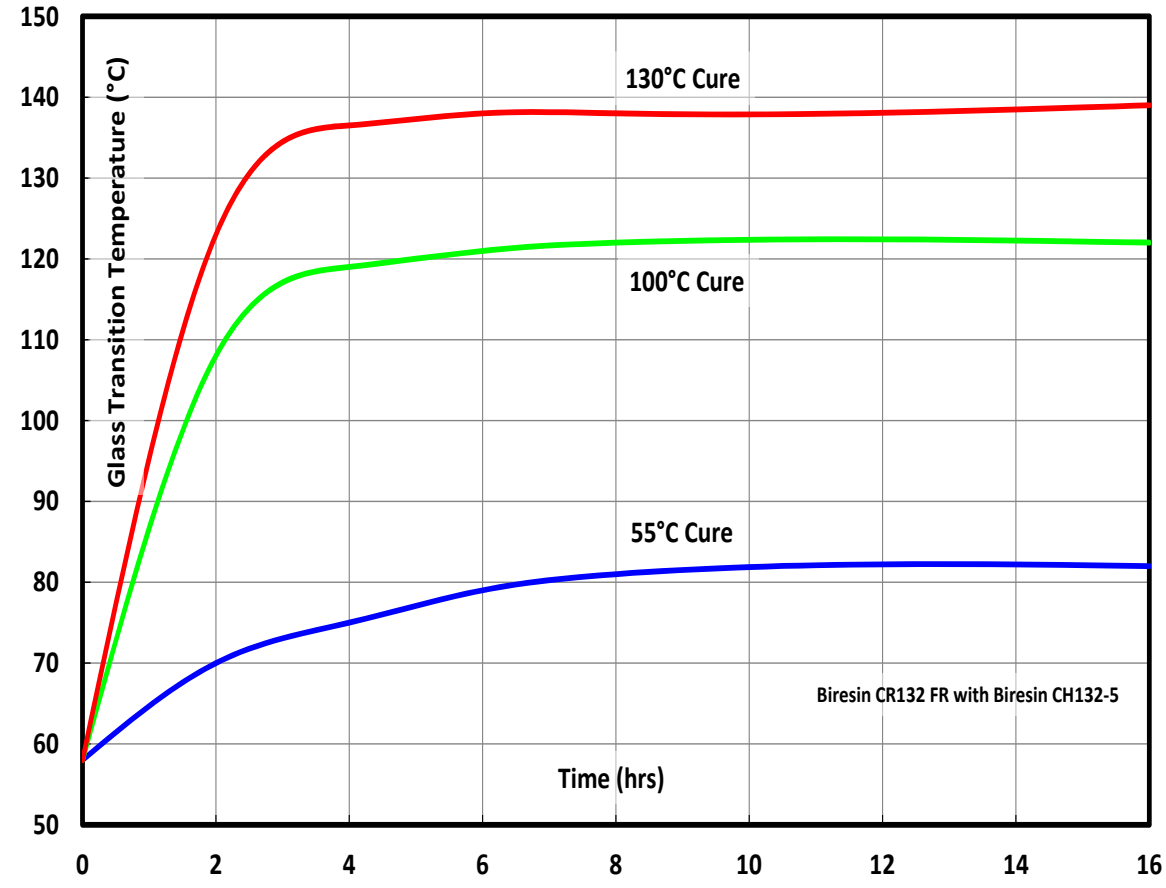
Postcuring

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 (Tg)
- 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 Tg potential of the system in question is reached.

Glass Transition Temperature vs. Cure Cycle



Packaging (net weight, kg)				
Biresin® CR132 FR resin (A)			250	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
Biresin® CH122-9 hardener (B), (blue)	900	180	20	4

Storage

- Minimum shelf life of Biresin® CR132 FR resin (A) is 24 month and of Biresin® CH132-2 hardener (B), Biresin® CH132-5 hardener (B), Biresin® CH132-7 and Biresin CH 122-9 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 safetyrelated 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

Further information available at:

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