

Biresin® CR141

Composite resin system for heat curing

Areas of Application

- In particular for pultrusion and filament winding processing
- Specially for applications when low reactivity and a long potlife are required

Product Benefits

- Approved by Germanischer Lloyd for the production of components
- Fast infiltration of dry fibres due to low mixed viscosity and an elevated processing temperature
- Adjustment of the potlife via the accelerator component

Description

- Basis Three-component-epoxy-system
- Resin (A) **Biresin® CR141**, epoxy resin, translucent
- Hardener (B) **Biresin® CH141**, carboxylic acid anhydride, transparent
- Accelerator (C) **Biresin® CA141**, amine, amber

Physical Data		Resin (A)	Hardener (B)	Accelerator (C)
Individual Components		Biresin® CR141	Biresin® CH141	Biresin® CA141
Viscosity, 25°C	mPas	8.250	< 10	200
Density, 25°C	g/ml	1.16	1.20	0.98
Mixing ratio	in parts by weight	100	90	2
			Mixture	
Potlife, 100 g / RT, approx. values		h	> 24	
Mixed viscosity, 25°C, approx. values		mPas	600	

Mechanical Data, neat resin specimen

approx. values after 3 h / 80°C + 3 h / 120°C + 3 h / 140°C (source: Sika internal)

Biresin® CR141 resin (A)		with Biresin® CH141 hardener (B) and Biresin® CA141 accelerator (C)	
Density	ISO 1183	g/cm³	1,20
Shore hardness	ISO 868	-	D 87
Flexural E-Modulus	ISO 178	MPa	3.100
Tensile E-Modulus	ISO 527	MPa	3.200
Flexural strength	ISO 178	MPa	145
Compressive strength	ISO 604	MPa	122
Tensile strength	ISO 527	MPa	78
Elongation at break	ISO 527	%	3,3
Impact resistance	ISO 179	kJ/m²	18

Processing

- Before demoulding an appropriate precuring is necessary.
- To clean brushes or tools immediately Sika Reinigungsmittel 5 is recommended.



Thermal data of neat resin specimen at different post curing conditions

Biresin® CR141 resin (A) with Biresin® CH141 hardener (B) and Biresin® CA141 accelerator (C)		
Heat distortion temperature	ISO 75B °C	137*
	ISO 75C °C	122*
Glass transition temperature	ISO 11357 °C	139*

* values after post curing: 3 h / 80°C + 3 h / 120°C + 3 h / 140°C

Packaging

Individual components	Biresin® CR141 resin (A)	1000 kg; 220 kg; 10 kg net
	Biresin® CH141 hardener (B)	1100 kg; 220 kg; 9 kg net
	Biresin® CA141 accelerator (C)	10 kg; 0.2 kg net

Storage

- Minimum shelf life of Biresin® CR141 resin (A) is 24 month and of Biresin® CH141 hardener (B) and CA141 accelerator (C) is 12 month under room conditions (18 - 25°C), when stored in original unopened containers.
- After prolonged storage at low temperature, crystallisation of resin may occur. This is easily removed by warming up for a sufficient time to a maximum of 80°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

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.



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Statement of Approval



Approval No. **WP 1420022 HH**

The material described below complies with the applicable requirements as given in the Rules and Regulations of Germanischer Lloyd. On this basis the material is

approved as **Laminating Resin**

for the construction of components provided that the recommendations for use as specified by the producer are observed.

Type **Biresin CR141**

Description **Two Component Epoxy Resin System**

Producer **SIKA Deutschland GmbH
Stuttgarter Str. 139
72574 Bad Urach
Germany**

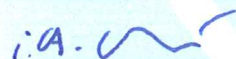
Normative Reference **Rules for Classification and Construction,
II - Material and Welding Technology
Part 2 Non-Metallic Materials**

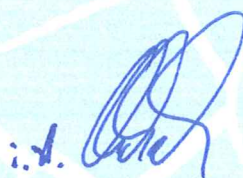
This document consists of this page and a one-page annex which is integral part of the approval.

This Statement of Approval is valid until 2018-05-21.

Hamburg, 2014-05-22

Germanischer Lloyd


Stefan Röhr


Guido Michalek

Statement of Approval



ANNEX

Approval No. WP 1420022 HH

Date: 2014-05-22

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Reference Documents Technical specifications deposited at Germanischer Lloyd Head Office.

Assessed Documents - Technical Data Sheet
- Test Report issued by IFB Stuttgart, dated on March 2014.

Fields of Application Construction of FRP laminates of components, on condition that the fibre reinforcements comply with the applicable requirements of the Germanischer Lloyd and are compatible to the resin.

Approved Variants Epoxy Resin Biresin CR141 with following hardener:
- Biresin CH141 and Accelerator Biresin CA141

Limitations Any significant changes in design and/or quality of the material will render the approval invalid.

End of Annex

Germanischer Lloyd

A handwritten signature in blue ink, appearing to be 'li', is written over the 'Germanischer Lloyd' text.