

Biresin® CR92

Composite resin system

Areas of Application

- For wet lay-up and other composites applications
- Biresin® CR92** with **Biresin® CH92-2**, **CH92-4** and **CH92-8** approved by Germanischer Lloyd for the production of components

Product Benefits

- Good impregnation and non-draining properties due to the optimised system viscosity
- Glass transition temperatures up to 90°C depending on curing conditions

Description

- Basis** Two-component-epoxy-system
- Resin (A)** **Biresin® CR92** epoxy resin, translucent
- Hardener (B)** **Biresin® CH92-2**, amine, colourless to yellowish (also available in yellow)
- Hardener (B)** **Biresin® CH92-4**, amine, colourless to yellowish (also available in red)
- Hardener (B)** **Biresin® CH92-8**, amine, colourless to yellowish (also available in blue)

Physical Data		Resin (A)		Hardener (B)	
Individual Components		Biresin® CR92	Biresin® CH92-2	Biresin® CH92-4	Biresin® CH92-8
Viscosity, 25°C	mPas	1,950	30	30	10
Density, 25°C	g/ml	1.14	0.93	0.95	0.95
Mixing ratio	in parts by weight	100	28		
			Mixture		
Potlife, 100 g / RT, approx. values	min		65	120	240
Mixed viscosity, 25°C, approx. values	mPas		440	610	410

Thermal data of neat resin specimen at different post curing conditions

Biresin® CR92 resin (A)		with hardener (B) Biresin®		CH92-2	CH92-4	CH92-8
		Post curing conditions				
Heat distortion temperature	8 h / 45°C	ISO 75A	°C	60	63	59
	8 h / 80°C	ISO 75A	°C	74	84	83
	8 h / 45°C	ISO 75B	°C	62	65	61
	8 h / 80°C	ISO 75B	°C	79	88	88
	8 h / 45°C	ISO 75C	°C	55	56	56
	8 h / 80°C	ISO 75C	°C	65	72	74
Glass transition temperature	8 h / 45°C	ISO 11357	°C	62	67	65
	8 h / 80°C	ISO 11357	°C	82	91	94

Processing

- The material and processing temperatures should be from 18 to 35°C.
- Parts can be demoulded after room temperature cure.
- To clean brushes or tools immediately Sika Reinigungsmittel 5 is recommended.
- Additional informations are available in "Processing Instructions for Composite Resins".



Mechanical Data, neat resin specimen at different post curing conditions

Part 1: approx. values after 8 h / 45°C

Biresin® CR92 resin (A)	with hardener (B) Biresin®		CH92-2	CH92-4	CH92-8
Density	ISO 1183	g/cm³	1.13	1.14	1.14
Flexural E-Modulus	ISO 178	MPa	3,300	3,200	3,350
Tensile E-Modulus	ISO 527	MPa	2,950	3,200	3,050
Flexural strength	ISO 178	MPa	119	128	121
Compressive strength			105	119	117
Tensile strength	ISO 527	MPa	53	78	71
Elongation at break	ISO 527	%	1.9	2.9	2.6
Impact resistance	ISO 179	kJ/m²	41	22	26

Part 2: approx. values after 8 h / 80°C

Biresin® CR92 resin (A)	with hardener (B) Biresin®		CH92-2	CH92-4	CH92-8
Density	ISO 1183	g/cm³	1,13	1.14	1.14
Flexural E-Modulus	ISO 178	MPa	3,000	3,100	3,100
Tensile E-Modulus	ISO 527	MPa	2,650	3,000	2,800
Flexural strength	ISO 178	MPa	118	130	124
Compressive strength			98	109	108
Tensile strength	ISO 527	MPa	80	89	85
Elongation at break	ISO 527	%	5.2	5.4	5.5
Impact resistance	ISO 179	kJ/m²	38	48	66

Packaging

Individual components	Biresin® CR92 resin (A)	200 kg; 10 kg net
	Biresin® CH92-2 hardener (B)	180 kg; 2.8 kg net
	Biresin® CH92-4 hardener (B)	180 kg, 20 kg; 2.8 kg net
	Biresin® CH92-8 hardener (B)	180 kg; 20 kg; 2.8 kg net

Storage

- Minimum shelf life of Biresin® CR92 resin (A) is 24 month and of Biresin® CH92-2 hardener (B), Biresin® CH92-4 hardener (B) and Biresin® CH92-8 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 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 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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Statement of Approval



Approval No. **WP 1320021 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 CR92 - Series**

Description **Two Component Epoxy Resin System**

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

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 2017-04-11.

Hamburg, 2013-04-12

Germanischer Lloyd


Stefan Rohr


Guido Michalek

Statement of Approval



ANNEX

Approval No. WP 1320021 HH

Date: 2013-04-12

Page 1 of 1

Reference Documents Technical specifications deposited at Germanischer Lloyd Head Office.

Assessed Documents - Technical Data Sheet
- Test Report issued by IFB Stuttgart

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 CR92 with following hardener:
- CH92-2 (natural) - CH92-2 (yellow)
- CH92-4 (natural) - CH92-4 (red)
- CH92-8 (natural) - CH92-8 (blue)
- CH80-6 (natural) - CH80-6 (blue)

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

End of Annex

Germanischer Lloyd

Call