Tooling & Composites

Product Data Sheet
Version 10 / 2013

Biresin® CR84
Composite resin system

Areas of Application
- In particular for 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
- Good impregnation and good non draining properties due to an optimized mixed viscosity
- Low exothermal reaction temperature due to long potlife

Description
- Basis: Two-component-epoxy-system
- Resin (A): **Biresin® CR84**, epoxy resin, tranlucent
- Hardener (B): **Biresin® CH84-20**, amine, transparent to yellowish

Physical Data		Resin (A)	Hardener (B)
Individual Components		**Biresin® CR84**	**Biresin® CH84-20**
Viscosity, 25°C	mPas	4,450	< 10
Density, 25°C	g/ml	1.15	0.94
Mixing ratio	in parts by weight	100	30
		Mixture	
Potlife, 100 g / RT, approx. values	h	10	
Mixed viscosity, 25°C, approx. values	mPas	575	

Processing
- The material and processing temperatures should be from 18 to 35°C.
- Before demoulding precuring of at least 2 h at 60°C is recommended.
- 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 12 h / 55°C (source: accredited testing institute)			
Biresin® CR84 resin (A)			with **Biresin® CH84-20** hardener (B)
Density	ISO 1183	g/cm³	1.15
Flexural-E-Modul	ISO 178	MPa	1,650
Tensile-E-Modul	ISO 527-2	MPa	3,700
Flexural strength	ISO 178	MPa	149
Tensile strength	ISO 527-2	MPa	72
Elongation at break	ISO 527-2	%	3.5
Water absorption after 7 d	ISO 175	%	0.39

Part 2: approx. values after 8 h / 70°C (source: Sika internal)			
Biresin® CR84 resin (A)			with **Biresin® CH84-20** hardener (B)
Density	ISO 1183	g/cm³	1.15
Shore hardness	ISO 868	-	D 85
Flexural E-Modulus	ISO 178	MPa	3.250
Tensile E-Modulus	ISO 527	MPa	3.550
Flexural strength	ISO 178	MPa	124
Compressive strength	ISO 604	MPa	104
Tensile strength	ISO 527	MPa	89
Elongation at break	ISO 527	%	5,7
Impact resistance	ISO 179	kJ/m²	76

Thermal data of neat resin specimen				
Biresin® CR84 resin (A)				with **Biresin® CH84-20** hardener (B)
	Post curing conditions			
Heat distortion temperature	12 h/55°C	ISO 75A	°C	76
	8 h/70°C	ISO 75A	°C	79
	8 h/70°C	ISO 75B	°C	82
	8 h/70°C	ISO 75C	°C	71
Glass transition temperature		ISO 11357	°C	81

Packaging		
Individual components	**Biresin® CR84** resin (A)	1000 kg; 200 kg; 10 kg net
	Biresin® CH84-20 hardener (B)	180 kg; 3 kg net

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 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

Further information available at:

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Statement of Approval

Approval No. **WP 1420018 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 CR84**

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 2018-06-21.

Hamburg, 2014-03-19

Germanischer Lloyd

i.A. Guido Michalek

i.A. Joachim Rehbein

Statement of Approval

ANNEX

Date: 2014-03-19

Approval No. WP 1420018 HH

Reference Documents	Technical specifications deposited at Germanischer Lloyd Head Office.
Assessed Documents	- Technical Data Sheet - Test Report issued by IFB Stuttgart, dated on 2010-03-04 - Test Report No. 90981/10 issued by SKZ Wuerzburg, dated on 2010-03-08
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 CR84 with following hardener: - Biresin CH84-20 - Biresin CH120-6
Limitations	Any significant changes in design and/or quality of the material will render the approval invalid.
Remarks	This certificate supersedes the approval WP 1020030 HH.

End of Annex

Germanischer Lloyd