BUILDING TRUST

PRODUCT DATA SHEET

SikaBiresin® CR87

Bio-sourced composite resin system for infusion and injection processes with T_g up to 87 °C

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties		Component A SikaBiresin® CR87	Component B SikaBiresin® CH87-2	Component B SikaBiresin® CH87-6	Component B SikaBiresin® CH87-10
Chemical base		Epoxy resin	Amine hardener	Amine hardener	Amine hardener
Color		Translucent	Colorless to yellowish	Colorless to yellowish	Colorless to yellowish
Density	cured	1.13 kg/l	0.95 kg/l 1.13 kg/l	0.94 kg/l 1.13 kg/l	0.93 kg/l 1.13 kg/l
Mixing ratio	by weight by volume		100 : 28 100 : 34	100 : 28 100 : 34	100 : 28 100 : 34
Viscosity (CQP029-4)	mixed	600 mPa·s	40 mPa·s 260 mPa·s	20 mPa·s 220 mPa·s	10 mPa·s 200 mPa·s
Application temperature		18 – 25 °C			
Pot life (CQP021-3 / Gel Timer TECAM)			80 min.	180 min.	400 min.
Curing conditions	8 hours		80 °C	80 °C	80 °C
Tensile strength (CQP036-2 / ISO 527)			80 MPa	75 MPa	75 MPa
Tensile modulus (CQP036-2 / ISO 527)			2800 MPa	2700 MPa	2650 MPa
Tensile elongation (CQP036-2 / ISO 527)			5.0 %	5.0 %	5.0 %
Flexural strength (CQP027-2 / ISO 178)			120 MPa	120 MPa	120 MPa
Flexural modulus (CQP027-2 / ISO 178)			3300 MPa	3200 MPa	3150 MPa
Compressive strength (CQP028-5 / ISO 604)			105 MPa	100 MPa	100 MPa
Shore D hardness (CQP023-1 / ISO 868)			83	83	83
Impact resistance (CQP038-2 / ISO 179)			50 kJ/m²	50 kJ/m²	50 kJ/m²
Glass transition temperature (CQP301-5 / ISO 11357)			85 °C	84 °C	87 °C
Heat deflection temperature (CQP030-1 / ISO 75A)			75 °C	75 °C	75 °C
Heat deflection temperature (CQP030-1 / ISO 75B)			81 °C	80 °C	80 °C
Heat deflection temperature (CQP030-1 / ISO 75C)			65 °C	65 °C	66 °C
Shelf life		24 months	12 months	12 months	12 months

CQP = Corporate Quality Procedure

DESCRIPTION

SikaBiresin® CR87 is a bio-sourced epoxy resin system suitable for the production of high performance fiber reinforced composite structures with thermal properties up to 87 °C by vacuum infusion process.

PRODUCT BENEFITS

- 38 % bio-based carbon content (resin)
- Wide range of processing times
- Fast infusion of fabrics and non-wovens
- DNV approved. Certificate No. TAK00002K3

AREAS OF APPLICATION

SikaBiresin® CR87 is especially suited for infusion and injection processes due to its low viscosity. It is designed for general industrial production and enables partially bio-based composite solutions.

This product is suitable for experienced professional users only. Tests under actual processing conditions and with additional materials such as fibers and release agents must be performed to proof material compatibility.

METHOD OF APPLICATION

Mixing process

The components must be mixed homogeneously by using the common mixing techniques for composite resins. To get full performance, the indicated mixing ratio must be respected precisely.
The temperature of the mixture has a direct influence on the viscosity and pot life of the resin system.
Note: Release agents or other additives can influence the material properties and performance.

Application

The resin system is optimized for processing temperatures between 18 °C – 25 °C. Consider the change in processing parameters if the resin system is processed at different temperatures. The curing must be performed at temperature ≥ 18 °C.
Information regarding reactivity and viscosity increase of different combinations of SikaBiresin® CR87 are shown in the diagrams below.

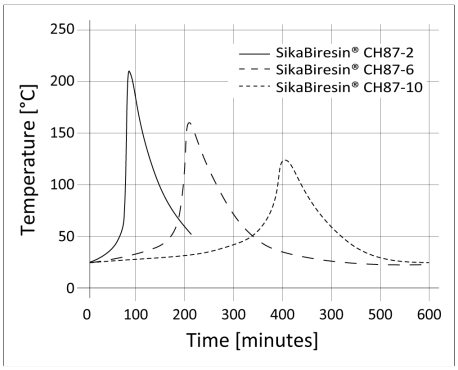


Diagram 1: Reactivity at 23 °C in a 100 ml insulated cup

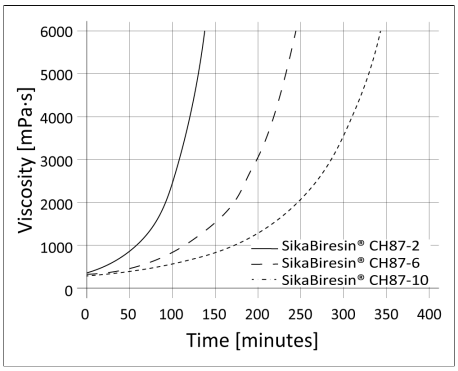


Diagram 2: Viscosity increase at 25 °C

Prior to application, check both components for crystallization. The crystallization process can be reversed by heating the product to 60 °C – 70 °C until the crystals are no longer visible.
Containers must be closed tightly immediately after each use to prevent moisture ingress.

Postcuring

Mechanical and thermal values of the laminated part depend on various factors, such as laminate thickness, fiber volume content, reactivity of the resin system as well as chosen curing cycle. For information concerning suitable curing cycles consult the General Guideline for Composite Resins.
Parts produced with SikaBiresin® CR87 must undergo a pre-curing of at least 4 hours at 40 °C before removing from the mold.

Removal

Uncured SikaBiresin® CR87 can be removed from tools and equipment with Sika® Reinigungsmittel 5 or another suitable solvent. Once cured, the material can only be removed mechanically. Hands and exposed skin shall be washed immediately using industrial hand cleaner and water.
Do not use solvents on skin.

STORAGE CONDITIONS

All components must be stored between 15 °C – 30 °C.
Prior to use check the material for homogeneity and crystallization and make sure to temper it to processing temperature.

FURTHER INFORMATION

The information herein is offered for general guidance only. Advice on specific applications is available on request from the Technical Department of Sika Industry.
Copies of the following publications are available on request:

- Safety Data Sheets
- General Guideline
  For Composite Resins

PACKAGING INFORMATION

SikaBiresin® CR87 (A)

Pail	10 kg
Drum	200 kg
IBC	1000 kg

SikaBiresin® CH87-2 (B)

Canister	2.8 kg
Drum	180 kg

SikaBiresin® CH87-6 (B)

Canister	2.8 kg
Drum	180 kg

SikaBiresin® CH87-10 (B)

Canister	2.8 kg
Drum	180 kg

BASIS OF PRODUCT DATA

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

HEALTH AND SAFETY INFORMATION

For information and advice regarding transportation, handling, storage and disposal of chemical products, users shall refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

DISCLAIMER

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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