BUILDING TRUST

PRODUCT DATA SHEET

# SikaBiresin® CR144 CH141 CA141

Composite resin system for advanced processes with $T_g$ up to 138 °C

## TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

| Properties | | Component A SikaBiresin® CR144 | Component B SikaBiresin® CH141 | Component C SikaBiresin® CA141 |
|---|---|---|---|---|
| **Chemical base** | | Epoxy resin | Anhydride hardener | Accelerator |
| **Color** | | Translucent | Transparent | Amber |
| **Density** | | 1.16 kg/l | 1.20 kg/l | 0.98 kg/l |
| | cured | 1.20 kg/l | | |
| **Mixing ratio** | by weight | 100 | 90 | 1 – 4 |
| | by volume | 100 | 87 | 1.2 – 4.7 |
| **Viscosity (CQP029-4)** | | 12 000 mPa·s | 40 mPa·s | 200 mPa·s |
| | mixed | 800 mPa·s | | |
| **Pot life (CQP021-3 / Gel Timer TECAM)** | | 24 hours | | |
| **Curing conditions** | | 3 h at 80 °C + 3 h at 120 °C + 3 h at 140 °C | | |
| **Tensile strength (CQP036-2 / ISO 527)** | | 95 MPa | | |
| **Tensile modulus (CQP036-2 / ISO 527)** | | 3200 MPa | | |
| **Tensile elongation (CQP036-2 / ISO 527)** | | 5.4 % | | |
| **Flexural strength (CQP027-2 / ISO 178)** | | 147 MPa | | |
| **Flexural modulus (CQP027-2 / ISO 178)** | | 3350 MPa | | |
| **Compressive strength (CQP028-5 / ISO 604)** | | 127 MPa | | |
| **Shore D hardness (CQP023-1 / ISO 868)** | | 86 | | |
| **Impact resistance (CQP038-2 / ISO 179)** | | 15 kJ/m$^2$ | | |
| **Glass transition temperature (CQP301-5 / ISO 11357)** | | 138 °C | | |
| **Heat deflection temperature (CQP030-1 / ISO 75A)** | | 128 °C | | |
| **Heat deflection temperature (CQP030-1 / ISO 75B)** | | 132 °C | | |
| **Heat deflection temperature (CQP030-1 / ISO 75C)** | | 116 °C | | |
| **Shelf life** | | 24 months | 12 months | 12 months |

CQP = Corporate Quality Procedure

## DESCRIPTION

SikaBiresin® CR144 CH141 CA141 is an accelerated anhydride cured epoxy resin system with thermal properties up to 138 °C.
It is especially suited for heated processes, which require a very long pot life.

## PRODUCT BENEFITS

- Very long pot life
- Very good mechanical properties
- Adjustability of reactivity by accelerator (C)

## AREAS OF APPLICATION

SikaBiresin® CR144 CH141 CA141 is particularly suited to the filament winding and pultrusion processes due to its low viscosity, good fibre wetting capabilities and very long pot life.
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 amount of accelerator SikaBiresin® CA141 must be between 1 and 4 parts per hundred of the resin component (A) and is mandatory.
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 data for viscosity and potlife in this Product Data Sheet is produced at 25 °C. Consider the change in processing parameters if the resin system is processed at different temperatures. The curing must be performed at temperature ≥ 80 °C for the material to solidify.
Information regarding viscosity development and reaction time depending on the amount of accelerator are shown in the diagrams below.

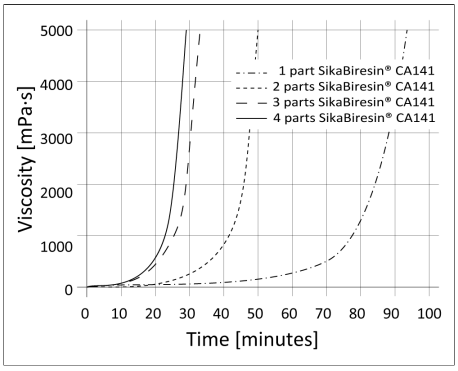


Diagram 1: Viscosity development at 80 °C depending on accelerator concentration

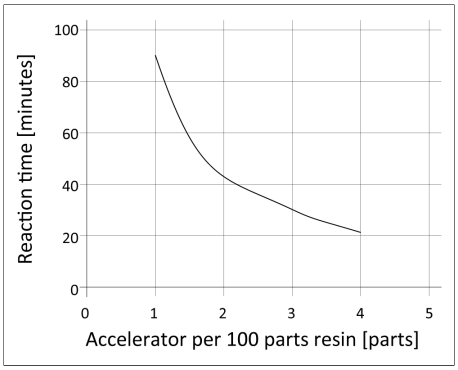


Diagram 2: Reaction time at 80 °C depending on accelerator concentration, Gelnorm (CQP021-5 / ISO 9396)

Prior to application, check all 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.

### Removal

Uncured SikaBiresin® CR144 CH141 CA141 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® CR144 (A)

| | |
|---|---|
| Pail | 10 kg |
| Drum | 200 kg |
| IBC | 1000 kg |

SikaBiresin® CH141 (B)

| | |
|---|---|
| Pail | 9 kg |
| Drum | 220 kg |
| IBC | 1100 kg |

SikaBiresin® CA141 (C)

| | |
|---|---|
| Can | 0.2 kg |
| Pail | 10 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

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