

Biresin® CR170 with Biresin® CH125-1 hardener Composite resin system

Areas of Application

- For injection processing

Product Benefits

- Short cycle times for RTM processing
- Glass transition temperatures up to 116°C dependent on curing conditions

Description

- Basis Two-component-epoxy-system
- Resin (A) **Biresin® CR170**, epoxy resin
- Hardener (B) **Biresin® CH125-1**, amine

| Physical Data | Resin (A) | Hardener (B) |
|---|-----------------------|-------------------------|
| Individual Components | Biresin® CR170 | Biresin® CH125-1 |
| Mixing ratio in parts by weight | 100 | 24 |
| Mixing ratio in parts by volume | 100 | 28 |
| Colour | translucent | colourless to yellowish |
| Viscosity, 25°C mPa.s | ~13,000 | ~900 |
| Density, 25°C g/cm³ | ~1.14 | ~1,02 |
| | Mixture | |
| Potlife, 100 g / RT, approx. values min | 24 | |
| Mixed viscosity, RT, approx. values mPa.s | 1,250 | |

Mechanical Data of neat resin specimen

| Biresin® CR170 resin (A) with hardener (B) | | | Biresin® CH125-1 | |
|--|------------------|-------|------------------|-------------|
| Curing conditions | time/temperature | | 9 min / 110°C | 2 h / 120°C |
| Tensile strength | ISO 527 | MPa | 75 | 75 |
| Tensile E-Modulus | ISO 527 | MPa | 2,400 | 2,400 |
| Elongation at break | ISO 527 | % | 8 | 8 |
| Flexural strength | ISO 178 | MPa | 100 | 100 |
| Flexural E-Modulus | ISO 178 | MPa | 2,500 | 2,500 |
| Shore hardness | ISO 868 | - | D 85 | D 84 |
| Impact resistance | ISO 179 | kJ/m² | 85 | 90 |

Processing

- The temperature of the resin system should be 30 - 40°C to achieve good mixing of components.
- The processing temperature of the mould should be between 60 and 120°C.
- To clean brushes or tools immediately Sika Reinigungsmittel 5 is recommended.
- Additional information are available in "Processing Instructions for Composite Resins".

Packaging (net weight, kg)

| | | | |
|--------------------------------------|-----|----|----|
| Biresin® CR170 resin (A) | 200 | 30 | 10 |
| Biresin® CH125-1 hardener (B) | 180 | | 3 |

| Thermal Data of neat resin specimen | | | | |
|-------------------------------------|-----------|--------------------|------------------|-------------|
| Biresin® CR170 resin (A) | | with hardener (B) | Biresin® CH125-1 | |
| Curing conditions | | time / temperature | 9 min / 110°C | 2 h / 120°C |
| Heat distortion temperature | ISO 75B | °C | 110 | 115 |
| | ISO 75C | °C | 85 | 100 |
| Glass transition temperature | ISO 11357 | °C | 110 | 115 |

Postcuring

The suitable cure cycle and the attainable mechanical and thermal values depend on various factors, such as laminate thickness, fibre volume, reactivity of the resin system etc.

An appropriate cure cycle could look as follows:

- Heat-up rate of ca. 0.2°C/Minute until approx. 10°C below the required glass transition temperature (T_g)
- Followed by a dwell at that temperature of between 2 and 12 hours.
- Part(s) should then be cooled at ~0.5°C per minute

The specific postcure should be adapted to the required technical and economic requirements.

To measure the mechanical performance of the resin system a SikaAxson standard cycle is used to ensure that the full T_g potential of the system in question is reached.

Storage

- Minimum shelf life of Biresin® CR170 resin (A) is 24 month and of Biresin® CH125-1 hardener (B) is 12 month under room conditions (18 - 25°C), when stored in original unopened containers.
- After prolonged storage crystallisation of resin may occur. This is easily removed by warming up for a sufficient time to at least 60°C.
- Containers must be closed tightly immediately after use to prevent moisture ingress. 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.

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