Tooling & Composites

Temporary Product Data Sheet
Version 05 / 2017

Biresin® CR170 with Biresin® CH100-1 hardener
Composite resin system

Areas of Application
- For injection processing

Product Benefits
- Short cycle times for RTM processing
- Glass transition temperatures up to 90°C dependent on curing conditions

Description
- Basis: Two-component-epoxy-system
- Resin (A): **Biresin® CR170**, epoxy resin
- Hardener (B): **Biresin® CH100-1**, amine

Physical Data			Resin (A)	Hardener (B)
Individual Components			**Biresin® CR170 Thix**	**Biresin® CH100-1**
Mixing ratio		in parts by weight	100	40
Mixing ratio		in parts by volume	100	45
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	15	
Mixed viscosity, RT, approx. values		mPa.s	5,400	

Mechanical Data of neat resin specimen

Biresin® CR170 resin (A)	with hardener (B)		**Biresin® CH100-1**	
Curing conditions		time/temperature conditions	10 min / 80°C	8 h / 80°C heating rate: 10°C/hr
Tensile strength	ISO 527	MPa	90	95
Tensile E-Modulus	ISO 527	MPa	3,500	3.600
Elongation at break	ISO 527	%	4.0	4.0
Flexural strength	ISO 178	MPa	130	150
Flexural E-Modulus	ISO 178	MPa	3,500	3,600
Density	ISO 1183 / A	g/cm³	1.16	1.16
Shore hardness	ISO 868	-	D 85	D 87
Impact resistance	ISO 179	kJ/m²	50	40

Processing
- The material and processing temperatures should be in the range 18 - 35°C.
- The mixing ratio must be followed accurately to obtain best results. Deviating from the correct mix ratio will lead to lower performance.
- The final mechanical and thermal values are dependent on the applied postcuring cycles.
- It is recommended to clean brushes or tools immediately after use with Sika Reinigungsmittel 5.
- Additional information is available in “Processing Instructions for Composite Resins”.

Thermal Data of neat resin specimen				
Biresin® CR170 resin (A)	with hardener (B)		**Biresin® CH100-1**	
Curing conditions (time / temperature)			10 mins / 80°C	8 hr / 80°C
Heat distortion temperature	ISO 75B	°C	75	90
	ISO 75C	°C	55	75
Glass transition temperature	ISO 11357	°C	85	90

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 (Tg)
- 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 Tg potential of the system in question is reached.

Packaging (net weight, kg)			
Biresin® CR170 resin (A)	1,000	200	10
Biresin® CH100-1 hardener (B)			4

Storage

- Minimum shelf life of Biresin® CR170 resin (A) is 24 month and of Biresin® CH100-1 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 at a minimum of 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.

Legal Notice

Further information available at:

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