Tooling & Composites

Product Data Sheet
Version 02 / 2016

Biresin® L84

Laminating and Multi-purpose resin

Product Description

Biresin® L84 is an epoxy resin tooling system which has been especially formulated for the production of high performance moulds of various types with excellent heat and mechanical resistance. Biresin® L84 has three different hardeners for flexible processing.

Application Areas

Biresin® L84 is suitable for the manufacture of many types of moulds including laminated moulds reinforced with either glass or carbon fibres. Biresin® L84 can also used to produce heat resistant backstamped moulds, models and negatives and for the production of vacuumforming moulds. The resin systems can also be used to manufacture highly filled polymer concrete

Features / Advantages

- Multi-purpose applications with different hardeners
- Resin has excellent wetting properties for both reinforcing fibres and fillers
- High glass fibre and filler content are possible
- Good heat resistance and mechanical resistance, especially after post curing: With hardener Biresin® S12 for faster curing and earlier demoulding
- With hardener Biresin® L84 T extended potlife and higher heat distortion temperature are achievable. A post cure is necessary to obtain the higher heat resistance.

Processing Data		**Resin (A)**	**Hardener (B)**		
Individual Components		**Biresin® L84**	**Biresin® L84**	**Biresin® S12**	**Biresin® L84 T**
Mixing ratio	**weight**	100	25	20	24
Mixing ratio	**volume**	100	26	23	30
Colour		translucent	colourless to transparent	colourless to yellowish	colourless to transparent
Viscosity, 25°C	mPa.s	~ 1,600	< 10	~ 140	< 10
Density, 25°C	g/ml	1.15	1.1	1.0	0.92
		Mixtures			
Mixed viscosity, 25°C, approx. values		mPa.s	390	1,090	590
Potlife, 500 g / RT, approx. values		min	40	20	60
Demoulding time, RT		h	24	24	24 + postcure

Physical Data (approx.-values)					
Biresin® L84 resin (A)		with hardener (B)	**Biresin® L84**	**Biresin® S12**	**Biresin® L84 T**
Tensile strength	ISO 527	MPa	87 / 74*	77	73*
Flexural strength	ISO 178	MPa	76	130	131*
Flexural E-Modulus	ISO 178	MPa	3,600	3,400	3,000
Compressive strength	ISO 604	MPa	118	120	127
Density	ISO 1183	g/cm³	1.1		
Shore hardness	ISO 868	-	D 82	D 84	D 86
Impact resistance	ISO 179	kJ/m²	18 / 21*	-	-
Heat distortion temperature	ISO 75B	°C	100*	91*	110**
Glass transition temperature	ISO 11357	°C	104***	-	123***

* values after post curing 2 h / 80°C, ** values after post curing 15 h / 80°C, *** values after 12 h / 100°C

Packaging (net weight, kg)

Biresin® L84 resin (A)		220	50	10
Biresin® L84 hardener (B)		50	12.5	2.5
Biresin® S12 hardener (B)		15	2.5	9 x 0.4
Biresin® L84T hardener (B)	180	53	15	2.5

Processing

- The material, processing and mould temperature must be from 18 to 25°C.
- The resin (A) component must be mixed thoroughly before use .
- After mixing resin (A) and hardener (B) components it is possible to incorporate additives if necessary.
- Biresin® L84 is applied quickly and easily due to its low viscosity. It will easily wet out fibres and incorporate high levels of fillers and powders with high binding force. Fibre laminates with thickness of more than 2 - 3 mm a break of 2 h is necessary to remove temperature peaks. With hardeners (B) Biresin® L84 und L84 T working without break is possible.
- With hardener (B) Biresin® L84 T demoulding is possible after room temperature curing of 24 h and approx. 4 - 5 h at 40 - 50°C. Complete cure is achieved by post curing approx. 15 h at 80°C.
- The ratio between resin mixture and selected fibre must be determined and reliably controlled.
- For laminates glass fibres with binding twill are better than binding cloth because of its better suppleness.
- To clean brushes or tools immediately Sika® Reinigungsmittel 5 is recommended.

Storage

- Minimum shelf life for Biresin® L84 and L84 T hardeners (B) is 18 month and for Biresin® L84 resin (A) and S12 hardener (B) is 24 month at ambient (18 - 25°C), when stored in original un-opened containers.
- After prolonged storage at low temperature, crystallisation of resin (A) may occur. This is easily removed by warming up for a sufficient time to a maximum of 80°C. Allow to cool to room temperature before use.
- 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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