Tooling & Composites

Product Data Sheet
Version 02 / 2016

Biresin® S12

Gelcoat, abrasion and heat resistant

Areas of Application

- Gelcoat for manufacture of vacuumforming moulds
- Gelcoat for foundry patterns
- Gelcoat for other moulds and models

Product Benefits

- Grey gelcoat
- Good spreading properties and non sagging up to 1 mm
- Good mechanical and heat resistance
- Good abrasion resistance
- Good solvent and styrene resistance

Description

- Basis: Two component epoxy system
- Component A: **Biresin® S12**, epoxy resin, grey
- Component B: **Biresin® S12**, amine, amber

Processing Data			Component A	Component B
Individual components			**Biresin® S12**	**Biresin® S12**
Viscosity, 23°C		mPa.s	~ 100,000	~ 180
Density, 23°C		g/ml	2.36	1.0
Mixing ratio A : B	in parts by weight		100	8
			Mixture	
Mixed viscosity, 23°C		mPa.s	~ 30,000	
Potlife, 500 g, RT		min	30	
Geltime, RT			45	
Demoulding time, RT		h	16 - 24	
Curing time	at RT at 40°C at 80°C	d h h	5 10 2	

Physical Data (approx. values)			
Biresin® S12 (A)	with component B		**Biresin® S12**
Colour			grey
Density	ISO 1183	g/cm³	2.1
Shore hardness	ISO 868	-	D 92
E-Modulus	ISO 178	MPa	7,500
Flexural strength	ISO 178	MPa	78
Compressive strength	ISO 604	MPa	130
Impact resistance	ISO 179	kJ/m²	10
Heat distortion temperature	ISO 75B	°C	> 100*

* values after post curing: 2 h / 80°C

Packaging

Working packages	**Biresin® S12** AB Pack	6 x 0.5 kg net component A + 6 x 0.04 kg net component B in a box
Individual components	**Biresin® S12** (A)	5 kg net
	Biresin® S12 (B)	5 kg; 2.5 kg net; 9 x 0.4 kg net in a box

BUILDING TRUST

Processing

- The material, processing and mould temperature must be from 18 to 25°C.
- The A component must be mixed thoroughly before use.
- Then the thoroughly mixed (with spatula or slow speed mixing equipment) and without air entrappment, Biresin® S12 resin is applied using a flat, short-haired brush or squeegee.
- The coating is available in an uniform direction to form a homogeneous, even and void-free surface coat on the mould surface which must be pretreated with suitable release agents.
- Within geltime a coupling layer or other backfilling layers can be applied to avoid adhesion problems.
- Better resistance of the surface compound to elevated temperatures, different solvents as well as exposition to water will be obtained after a post treatment of 2 h at 80°C of demoulded parts. In this case a slow heating and slow decreasing of temperature after treatment are required.

Storage

- Minimum shelf life of Biresin® S12 (A) is 24 month and of Biresin® S12 AB Pack and Biresin® S12 (B) is 12 month under room condition (18 - 25°C), when stored in original un-opened containers.
- After prolonged storage at low temperature, crystallisation of components may occur. This is easily removed by warming sufficient time to a maximum of 70°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:

Sika Deutschland GmbH
Subsidiary Bad Urach
Stuttgarter Str. 139
D - 72574 Bad Urach
Germany

Tel: +49 (0) 7125 940 492
Fax: +49 (0) 7125 940 401
Email: tooling@de.sika.com
Internet: www.sika.com