Tooling & Composites

Product Data Sheet
Version 02 / 2016

Biresin® RG51 HS

Low pressure RIM-system, high impact resistant

Areas of Application

- Manufacture of shock-resistant mouldings

Product Benefits

- Fast curing with good flowability
- Short demoulding time
- Very abrasion resistant surface
- Simulation of PE / PP with very high impact resistance

Description

- Basis: Two component PUR system
- Component A: **Biresin® RG51 HS**, polyol, yellowish-translucent and black
- Component B: **Biresin® G53**, MDI-based isocyanate, amber

Processing Data		Component A	Component B
Individual components		**Biresin® RG51 HS**	**Biresin® G53**
Viscosity, 25°C	mPa.s	~ 1,300	~ 175
Density	g/cm³	1.05	1.23
Mixing ratio A : B	in parts by weight	100	50
Mixing ratio A : B	in parts by volume	100	43
		Mixture	
Potlife, RT	s	60	
Demoulding time, plastic mould, RT	min	10 - 20	
Curing time, RT	d	~ 3	

Physical Data (approx. values)			
Biresin® RG51 HS (A)	with component B		**Biresin® G53**
Density	ISO 1183	g/cm³	1.15
Shore hardness	ISO 868	-	D 65
E-Modulus	ISO 178	MPa	450
Flexural strength	ISO 178	MPa	20
Tensile strength	ISO 527	MPa	25
Elongation at break	ISO 527	%	150
Tear resistance	ISO 34	N/mm	120
Notched bar impact resistance	ISO 179	kJ/m²	75
Heat distortion temperature	ISO 75 B	°C	65
Abrasion resistance	ISO 4649 A	mm³	160

Packaging

Individual components	**Biresin® RG51 HS** (A) translucent	20 kg net
	Biresin® RG51 HS (A) black	20 kg net
	Biresin® G53 (B)	200 kg; 20 kg; 10 kg net

Processing

- Component A must be stirred thoroughly before use.
- Component A must be preheated up to at least 30°C. The mould temperature should be at least 30°C. This is necessary to avoid a brittleness phase at short demoulding times.
- For processing a two-component dosage mixing machine is necessary which conforms to reactivity of resin system and volume of casting parts. A static-dynamic mixing unit is recommended.
- Machine vessel for component A must have a mixing unit and heating.
- Machine vessel for component B must be moisture tight, e. g. by installation of a silicagel filter.
- The resin and hardener components are to be mixed thoroughly and poured immediately into previously released moulds (e.g. with Sika® Liquid Wax-815 resp. Sika® Pasty Wax-818; for more information see product data sheet).
- Improved thermal stability of the demoulded mouldings can be obtained by thermal post curing (e. g. 4 h / 80°C, take slightly increased shrinkage values into account).
- For heavy parts and parts with complicated geometry a support while post curing is recommended.

Storage

- Minimum shelf life is 12 month under room conditions (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 up for a 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