Technical Data Sheet
Version 01 / 2008

Tooling & Composites

Biresin® RG53 FR

Low pressure RIM-system, flame retardant

Areas of Application

- Manufacture of housings and coverings
- Manufacture of thinwalled mouldings with complexe structure
- Manufacture of flame retardant parts

Product Benefits

- Flame retardant V-0 according UL 94 at 3 mm thickness
- Classification of flammability according to E DIN 5510-2 S4, ST2 and SR2 at 10 mm thickness
- Flammability according to appendix IV EU Directive R 95/28/EC at 3 mm thickness
- Simulation of ABS with good impact resistance
- Fast curing with good flowability
- Short demoulding time

Description

- Basis: Two-component-PUR-system
- Resin: **Biresin® RG53 FR**, polyol, black and beige, unfilled
- Hardener: **Biresin® U5**, MDI-based isocyanate, brown, unfilled

Processing Data		Resin	Hardener
Individual components		**Biresin® RG53 FR**	**Biresin® U5**
Viscosity, 25°C	mPas	approx. 1,200	approx. 110
Density	g/cm³	1.20	1.23
Mixing ratio resin to hardener	in parts by weight	100	54
Mixing ratio resin to hardener	in parts by volume	100	52
		Mixture	
Potlife, RT	s	approx. 75	
Demoulding time, RT, dependent on thickness	min	> 10	
Curing time, RT	d	approx. 1	

Physical Data (approx.-values)			
Biresin® RG53 FR resin		with hardener	**Biresin® U5**
Density	ISO 1183	g/cm³	1.27
Shore hardness	ISO 868	-	D 84
E-Modulus	ISO 178	MPa	2,200
Flexural strength	ISO 178	MPa	70
Tensile strength	ISO 527	MPa	45
Elongation at break	ISO 527	%	5
Impact resistance	ISO 179	kJ/m²	35
Heat distortion temperature	ISO 75B	°C	110*

* values after post curing: 4 h / 80°C + 2 h / 120°C
** post curing can increase shrinkage

Packaging

Individual components	**Biresin® RG53 FR** resin	25 kg net
	Biresin® U5 hardener	250 kg; 17 kg; 4.25 kg net

Processing

- The material and processing temperature must be at least 20°C, if necessary to 40°C, mould temperature at least 20°C up to max. 60°C.
- The resin component must be stirred thoroughly before use.
- For processing a two-component dosage mixing machine is necessary which conforms to reactivity of resin and volume of casting parts.
- Machine vessel for resin component (part A - polyol) must have a mixing unit and heating.
- Machine vessel for hardener component (Part B - isocyanate must be moisture tight, e. g. by installation of a silicagel filter.
- Prior to casting, ensure moulds are thoroughly released. If the application of silicone free release agents is necessary, Sika® Trennmittel 810, 815 Quick or Sika® Trennwachs 818 (for more information see Technical Data Sheet) are recommended.
- Improved thermal stability of the demoulded mouldings can be obtained by post-curing.

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 regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets 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

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