BUILDING TRUST

PRODUCT DATA SHEET

# SikaBiresin® RG57 FR (Biresin® RG57 FR)

LOW PRESSURE RIM SYSTEM FOR FLAME RETARDANT PARTS – SIMULATION OF ABS

## APPLICATIONS

- Manufacture of stiff housings and coverings
- Manufacture of thin walled mouldings with complex structure
- Manufacture of flame retardant parts

## MAIN PROPERTIES

- Simulation of ABS
- Fast curing with good flowability
- Short demoulding time
- Flame retardant according to **UL 94; V0** at 3 mm thickness
- Flame retardant according to **DIN EN 45545-2; R22/R23/R24**

## DESCRIPTION

| | |
|---|---|
| Basis | Two component polyurethane system |
| Component A | **SikaBiresin® RG57 FR**, polyol, beige and black |
| Component B | **SikaBiresin® RG500,** MDI-based isocyanate, brown |

## PHYSICAL PROPERTIES

| | | Polyol (A) | Isocyanate (B) |
|---|---|---|---|
| Components | | **SikaBiresin® RG57 FR** | **SikaBiresin® RG500** |
| Viscosity, 25 °C | mPa.s | ~ 3,800 | ~ 110 |
| Density | g/cm³ | 1.30 | 1.23 |
| Mixing ratio A:B | in parts by weight | 100 | 44 |
| | | Mixture | |
| Colour | | beige / black | |
| Pot life, room temperature | s | ~ 55 | |
| Demoulding time, room temperature | min | > 10 | |
| Curing time, room temperature | d | ~ 1 | |

## MECHANICAL PROPERTIES

approx. values; processing conditions: aluminium mould with 60 °C mould temperature

| | | | |
|---|---|---|---|
| Density | ISO 1183 | g/cm³ | 1.30 |
| Shore hardness | ISO 868 | - | D 80 |
| Flexural modulus | ISO 178 | MPa | 2,350 |
| Flexural strength | ISO 178 | MPa | 70 |
| Tensile strength | ISO 527 | MPa | 38 |
| Elongation at break | ISO 527 | % | 4 |
| Impact resistance | ISO 179 | kJ/m² | 20 |

## THERMAL AND SPECIFIC PROPERTIES

approx. values; processing conditions: aluminium mould with 60 °C mould temperature

| | | | |
|---|---|---|---|
| Heat deflection temperature | ISO 75B | °C | 90 |

## PACKAGING UNITS

| | |
|---|---|
| ■ Polyol (A), **SikaBiresin® RG57 FR** beige | 25 kg |
| ■ Polyol (A), **SikaBiresin® RG57 FR** black | 25 kg / 200 kg |
| ■ Isocyanate (B), **SikaBiresin® RG500** | 5 kg / 20 kg / 250 kg |

## PROCESSING DATA

- The material and processing temperature should be at least 18 – 25 °C, mould temperature at least 20 – 60 °C.
- Component A must be stirred thoroughly before use.
- For processing, a suitable two-component meter mix and dispense machine should be used.
- The machine should be conform to the reactivity of the material and the volume of the casted parts. A static-dynamic or dynamic mixing unit is recommended.
- The machine vessel for component A must have a mixing unit. Furthermore, a heating unit for the machine vessels of both components is recommended.
- Machine vessel for both components must be moisture tight, e.g. by installation of a silicagel filter.
- Recommended release agents are Sika® Liquid Wax-852 or Sika® Liquid Spray-872. For more information, see Product Data Sheets of the release agents.
- Pay attention to dry conditions and dry mould surfaces (moisture content of wood < 7 %) while processing.
- Increased mould temperatures are decreasing the demoulding time.
- Further post curing of the demoulded part can improve the final mechanical properties. The final thermal properties depend on the process and production conditions.
- Depending on the geometry and weight of the part, it is recommended to use a conformer while post curing.
- Before overpainting, the parts have to be grinded or sandblasted. A polyurethane paint is recommended.

## STORAGE CONDITIONS

| | | |
|---|---|---|
| Shelf life | ■ Polyol (A), **SikaBiresin® RG57 FR**<br>■ Isocyanate (B), **SikaBiresin® RG500** | 12 months<br>12 months |
| Storage temperature | ■ Polyol (A), **SikaBiresin® RG57 FR**<br>■ Isocyanate (B), **SikaBiresin® RG500** | 18 – 25 °C<br>18 – 25 °C |
| Crystallization | ■ After prolonged storage at low temperature, crystallization of B component may occur.<br>■ This is easily removed by warming up for a sufficient time to a maximum of 70 °C.<br>■ Allow to cool to requested processing temperature before use. | |
| Opened packagings | ■ Containers must be closed tightly immediately after use to prevent moisture ingress.<br>■ The residual material needs to be used up as soon as possible. | |

## FLAME RETARDANT APPROVALS

**UL94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances – 3 mm thickness**

| | |
|---|---|
| UL94 | ■ V0 |

**DIN EN 45545-2 - Railway applications - Fire protection on railway vehicles - Requirements for fire behavior of materials and components**

| | |
|---|---|
| DIN EN ISO 5659-2 –<br>4 mm thickness | ■ Smoke density: Ds (max) = 253<br>■ R22 / HL 2<br>■ R23 / HL 3 |
| DIN EN ISO 4589-2 –<br>4 mm thickness | ■ Oxygen Index = 32.8%<br>■ R22 / HL 3<br>■ R23 / HL 3<br>■ R24 / HL 3 |
| DIN EN ISO 5658-2 –<br>4 mm thickness | ■ CFE critical flux at extinguishment:<br>13,81 kW/m² |
| NF X 70-100-1:2006 –<br>3 mm thickness | ■ $CIT_{NLP}$: 0.28 |

**FURTHER INFORMATION**
The information herein is offered for general guidance only. Advice on specific applications is available on request from the Technical Department of Sika Advanced Resins. Copies of the following publications are available on request: Safety Data Sheets

**BASIS OF PRODUCT DATA**
All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

**HEALTH AND SAFETY INFORMATION**
For information and advice regarding transportation, handling, storage and disposal of chemical products, users shall refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

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