BUILDING TRUST

PRODUCT DATA SHEET

# SikaBiresin® PX235 HT

VACUUM CASTING POLYURETHANE FOR TECHNICAL PARTS AND PROTOTYPES

## APPLICATIONS

- Making prototype parts and mock-ups with mechanical properties similar to thermoplastics by casting in silicone molds when temperature resistance is required even for long lasting

## MAIN PROPERTIES

- Temperature resistance > 200 °C
- Good flexion and impact resistance
- Easy processing – low viscosity

## DESCRIPTION

| | |
|---|---|
| Basis | Two component polyurethane system |
| Component A | **SikaBiresin® PX235 HT**, isocyanate, light amber |
| Component B | **SikaBiresin® PX235 HT**, polyol, transparent |

## PHYSICAL PROPERTIES

| | | | Isocyanate (A) | Polyol (B) |
|---|---|---|---|---|
| Component | | | **SikaBiresin® PX235 HT** | **SikaBiresin® PX235 HT** |
| Viscosity, 25 °C | mPa.s | BROOKFIELD LVT | 35 | 250 |
| Density, 25 °C | | ISO 1675 | 1.22 | 1.01 |
| Mixing ratio, 23 °C | by weight | | 100 | 50 |
| | | | **Mixture** | |
| Color | | | Light amber | |
| Viscosity, 25 °C | mPa.s | | 150 | |
| Pot life, 150 g, 25 °C | min | Gel Timer TECAM | 5 | |
| Maximum casting thickness | mm | | 5 | |

## MECHANICAL PROPERTIES

(approx. values obtained on standardized specimens / hardening 1 hour / 70 °C + 1 hour / 100 °C + 12 hours / 160 °C)

| | | | |
|---|---|---|---|
| Density, 23 °C | ISO 2781 | g/cm³ | 1.19 |
| Shore hardness, 23 °C | ISO 868 | D1 | 80 |
| Shore hardness, 130 °C | | | 75 |
| Shore hardness, 160 °C | | | 70 |
| Flexural modulus of elasticity | ISO 178 | MPa | 2,500 |
| Flexural strength | ISO 178 | MPa | 100 |
| Tensile modulus of elasticity, 23 °C | ISO 527 | MPa | 1,800 |
| Elongation at break in tension | ISO 527 | % | 5 |
| Impact resistance (CHARPY) | ISO 179 | kJ/m² | 75 |
| Linear shrinkage in silicone form | | mm/m | 6 |

## THERMAL AND SPECIFIC PROPERTIES

(approx. values obtained on standardized specimens / hardening 1 hour / 70 °C + 1 hour / 100 °C + 12 hours / 160 °C)

| | | | |
|---|---|---|---|
| Glass transition temperature (Tg) | ISO 11359-2 | °C | 200 |

## PACKAGING UNITS

| | |
|---|---|
| ■ Isocyanate (A), **SikaBiresin® PX235 HT** | 6 x 1 kg net |
| ■ Polyol (B), **SikaBiresin® PX235 HT** | 6 x 0.5 kg net |

## PROCESSING DATA

- The material and processing temperature shall be between 18 °C and 25 °C.
- Temperature of a silicone mold shall be at least 70 °C.
- The material can only be used in a vacuum casting machine.
- Prior to use check the material for homogeneity and crystallization.
- After prolonged storage at low temperature, crystallization of components may occur. This process can be easily reversed by heating the affected component to a maximum of 70 °C until the crystals have disappeared. Allow to cool down to requested processing temperature before use.
- When using pigments, it is recommended to add 1% of the pigments to the polyol. The pigments must be free of moisture and thoroughly homogenized with the polyol.
- For the pigmentation of the vacuum casting resins the CP colors are recommended, which have been tested and approved especially for this product system.
- Weigh the isocyanate into the upper mixing cup depending on the mixing ratio, taking into account the residual material in the cup. Weigh the polyol into the lower mixing cup according to the mixing ratio.
- Both components shall be evacuated separately under vacuum for 10 minutes.
- After evacuation, both components shall be mixed in vacuum chamber for 45 seconds – 1 minute, always considering the pot life.
- Immediately after mixing pour the product into the preheated silicone mold. After casting, the mold must be placed in an oven preheated to 70 °C for 60 minutes to cure.
- Containers must be closed tightly immediately after use to prevent moisture ingress.
- Once opened the product shall be used up as soon as possible.
- Further post curing of the demolded part can improve the final mechanical properties. Carry out the following thermal treatment: 1 hour at 100 °C + 2 hours at 130 °C + 12 hours at 160 °C.
- Depending on the geometry and weight of the part, it is recommended to use a conformer while post curing.

## STORAGE CONDITIONS

| | | |
|---|---|---|
| Shelf life | ■ Isocyanate (A), **SikaBiresin® PX235 HT** | 6 months |
| | ■ Polyol (B), **SikaBiresin® PX235 HT** | 6 months |
| Storage temperature | ■ Isocyanate (A), **SikaBiresin® PX235 HT** | 15 °C – 25 °C |
| | ■ Polyol (B), **SikaBiresin® PX235 HT** | 15 °C – 25 °C |

**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.

**LEGAL NOTICE**
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