BUILDING TRUST

PRODUCT DATA SHEET

SikaBiresin® PX221

VACUUM CASTING POLYURETHANE FOR TECHNICAL PARTS AND PROTOTYPES FLEXURAL MODULUS 2100 MPa – TG 95 °C

APPLICATIONS

- Making prototype parts and mock-ups with mechanical properties similar to thermoplastics like unfilled ABS by casting in silicone moulds.

MAIN PROPERTIES

- Nice 'plastic' behaviour
- Quick setting at 70°C
- Can be easily coloured with CP pigments
- High impact resistance

DESCRIPTION

Basis	Two component polyurethane system
Component A	**SikaBiresin® PX221**, Isocyanate, yellow straw
Component B	**SikaBiresin® PX221** Polyol, yellow straw

PHYSICAL PROPERTIES

			Isocyanate (A)	Polyol (B)
Components			**SikaBiresin® PX221**	**SikaBiresin® PX221**
Viscosity, 25 °C	mPa.s	BROOKFIELD LVT	~ 130	~ 600
Density, 25 °C		ISO 1675 : 1985	1.17	1.11
Mixing ratio, 23 °C	in parts by weight		100	45
			Mixture	
Colour			Off-white	
Viscosity, 25 °C	mPa.s	BROOKFIELD LVT	350	
Pot life, 145 g, 25 °C	min	Gel Timer TECAM	7	
Advised Maximum casting thickness	mm		5	

MECHANICAL PROPERTIES

(Average values obtained on standardized specimens / 16 h at 80 °C)

Density, 23 °C	ISO 2781 : 1996		1.20
Shore hardness	ISO 868 : 2003	Shore D1 @ 23°C	81
		Shore D15 @ 23°C	79
Tensile Modulus	ISO 527 : 1993	MPa	2,800
Tensile strength	ISO 527 : 1993	MPa	60
Elongation at break in tension	ISO 527 : 1993	%	7.5
Flexural modulus of elasticity	ISO 178 : 2001	MPa	2,100
Flexural strength	ISO 178 : 2001	MPa	105
Impact resistance (CHARPY)	ISO 179/1eU : 1994	kJ/m²	71

THERMAL AND SPECIFIC PROPERTIES

(Average values obtained on standardized specimens / 12 h at 70 °C)

Glass transition temperature (Tg)	ISO 11359-2 : 1999	°C	95
Heat **D**eflection **T**emperature	ISO 75 Ae: 2004	°C	78
Coefficient of **T**hermal **E**xpansion	ISO 11359-2 1999	10^{-6} K^{-1}	78
Demoulding time, 3 mm, 70 °C		min	40
Linear shrinkage in 3 mm		mm/m	5

PACKAGING UNITS

- **SikaBiresin® PX221 (A)** isocyanate 6 x 1 KG net
- **SikaBiresin® PX221 (B)** polyol 6 x 0.45 KG net

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- Ensure good ventilation.
- Wear gloves, glasses and protective clothes.

For further information, please consult the Safety Data Sheets.

PROCESSING DATA

Vacuum casting machine process:

- Heat the mould at 70 °C (only polyaddition silicone mould)
- Heat isocyanate and polyol at 23 °C in case of storage at lower temperature
- Weigh Isocyanate in upper bowl (do not forget additional waste)
- Weigh Polyol in lower bowl (mixing bowl)
- After degassing for 10 minutes under vacuum, pour Isocyanate into Polyol and mix for 1 minute.
- Leave 1 min under full vacuum to get bubbles burst.
- Cast under adapted vacuum level in silicone mould previously heated at 70 °C
- Let it cure at 70 °C for 40 minutes.
- Open the mould carefully and let it cool down for couple of minutes before releasing part.

STORAGE CONDITIONS

Shelf life	■ Isocyanate (A), **SikaBiresin® PX221** ■ Polyol (B), **SikaBiresin® PX221**	09 months 09 months
Storage temperature	■ Isocyanate (A), **SikaBiresin® P221** ■ Polyol (B), **SikaBiresin® PX221**	15 – 25 °C 15 – 25 °C
Crystallization	■ Isocyanate could crystallize (non homogeneous aspect - milky). ■ Place in an oven at 50/60 °C until it comes back transparent homogeneous. ■ Let it cool down before use.	
Opened packagings	■ Any open containers must be tightly sealed and stored in a dry place under dry nitrogen. ■ Avoid storage of open containers for more than few days	

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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