

PR-3612 / PH-3920

Vacuum Casting Resin

Fast curing, two component polyurethane system

Key Properties

- Simulates PP / ABS
- High impact resistance
- High flexural strength
- Temperature resistant up to 135°C
- Low viscosity for easy pouring and degassing

Applications

- Functional prototype parts
- Pilot production / short run production
- Rapid prototyping

Processing Properties

		Unit	PR-3612	PH-3920
Color	visual		black	brown
Mix ratio		pbw	100	125
Mix ratio		pbv	100	118
Density	ISO 1183	g/cm ³	1.14	1.20
Viscosity at 25 °C	DIN 53019-1	mPa·s	300 - 400	2,000 - 3,000

		Unit	PR-3612 / PH-3920
Pot life at 25 °C	50 ml	min	9 - 11
Max. layer thickness		mm	10
Demold time	70°C	min	45 - 60

Cured / Mechanical Properties

		Unit	PR-3612 / PH-3920 2h at 70°C + 2h at 110°C
Cure			
Color		visual	black
Density	ISO 1183	g/cm ³	ca. 1.20
Hardness	ISO 868	Shore D	75 - 80
Deflection temperature, HDT	ISO 75	°C	130 - 135
Tensile strength	ISO 527	MPa	70 - 75
Elongation at break	ISO 527	%	17 - 18
Flexural strength	ISO 178	MPa	100 - 110
Flexural modulus	ISO 178	MPa	1,900 - 2,000
Impact strength Charpy (edgewise)	ISO 179-1/1eU	kJ/m ²	65 - 70
Linear shrinkage*		mm/m	ca. 3.00

*measured on maximum layer thickness as stated above



Processing

The A component needs to be stirred well before use, taking care not to entrap any air, as some fillers might be prone to sedimentation.

The processing temperature of the individual components can be selected from 23°C to 60°C as required.

The molds should be preheated to 60-70°C.

To ensure an optimal process flow, the A component (polyol) should be weighed into the upper container of the mixing chamber and the B component (isocyanate) into the lower container (stirring cup) of the mixing chamber.

A predegas time of 8-10 minutes for the individual components is recommended.

The mixing time of approx. one minute must be observed.

Recommended cure schedule

After curing in the mold for 1-2 hours at 60-70°C, the mold can be opened and the part demolded.

The parts should be heated up in steps to 110°C and post cured for a minimum of 2 hours at 110°C. Afterwards the part needs to be cooled down gradually. The curing time at room temperature, heating and cooling rate depend on the size and thickness of the parts.

Packaging

RAKU® TOOL PR-3612	180 kg, 4 kg, 6x 0,8 kg
RAKU® TOOL PH-3920	225 kg, 5 kg, 6 x 1,00 kg

Storage

Original containers should be kept tightly sealed and stored at ambient temperatures (15°C to 30°C). If properly stored the products have the shelf-life indicated on the product label. Partly used containers should always be sealed appropriately and used up as soon as possible.

Handling precautions

Good workplace ventilation is to be ensured during processing. At the same time, the employer's liability insurance association's industrial hygiene safety regulations regarding the handling of reaction resins and their hardeners are to be observed. Please take heed of the appropriate safety data sheets.