RAKU-TOOL®
PR-3602 (Polyol) / PH-3905 (Isocyanate)

RAMPF discover the future

Prototyping System

Fast curing, two component Polyurethane

Key Properties

- Simulates PE/PP
- Good impact strength
- Temperature resistant
- Fast demold time

Applications

- Functional prototype parts & Bumpers
- Short run production
- Rapid Prototyping

Processing Properties

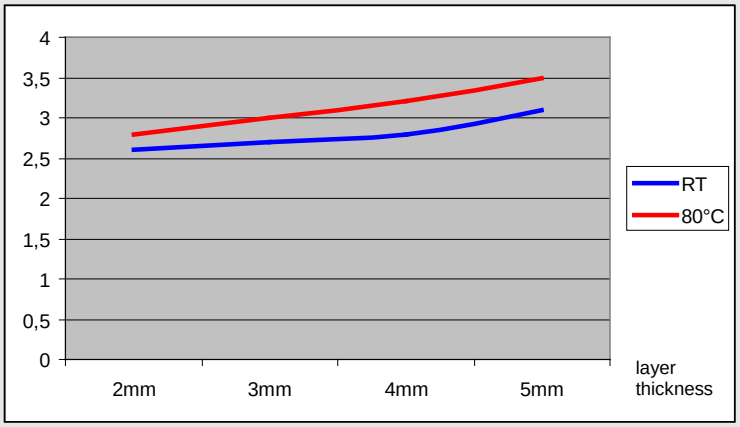
			PR-3602	PH-3905
Color	visual		Black	Brown
Mix ratio		pb weight	100	80
		pb volume	100	68
Density	ISO 1183	g/cm^3	ca. 1.04	ca. 1.22
Viscosity at 25 °C	DIN 53019-1	mPa·s	1800-2200	150-200

			PR-3602 / PH-3905
Pot life at 25 °C		sec	60
Layer thickness		mm	4
Demold time (RT)		min	10-20

Cured / Mechanical Properties

Cure: 1h at RT + 14h at 80°C			PR-3602 / PH-3905
Appearance	visual		Black
Density	ISO 1183	g/cm^3	ca. 1.14
Shore hardness D	ISO 868		70-75
Deflection temperature, HDT	ISO 75	°C	85-90
Tensile strength	ISO 527	MPa	25-30
Elongation at break	ISO 527	%	20-25
Flexural strength	ISO 178	MPa	35-40
Flexural modulus	ISO 178	MPa	800-900
Impact strength Charpy (edgewise)	ISO 179-1/1eU	KJ/m^2	70-75
Tear strength	DIN 53515	N/mm	-
Abrasion	Taber	mm^3/100R	50-55
Linear shrinkage		mm / m	see graph on next page

Linear shrinkage mm/m



Processing

The processing and material temperature should be between 20-25 ºC.
The A component needs to be stirred well before use as some fillers might be prone to sedimentation.
Hand mixing or manual processing of the material is not recommended. To process the material it is recommended to use a two component low pressure casting machine with a static dynamic mixer. The material must be cast into the mold during the pot life time but not too fast to avoid any air entrapment.
The recommended material temperature **must** be observed. Too high or low a material temperature will change the viscosity (high/low) and have a direct influence on the mixing ratio set up on the machine. Changes in the mixing ratio will result in faults in the finished part.
The mechanical properties and temperature resistance are only obtained through the post cure according to the recommended cure schedule.

Recommended cure schedule

After initial curing at room temperature for 1-2 hours depending on the size and thickness of the parts, the parts must be heated up to 80°C in steps and post cured for 14 hours at 80°C, then 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-3602	25 kg
RAKU-TOOL® PH-3905	0.5 kg / 6 x 0.5 kg / 25 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.

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