

# RAKU-TOOL<sup>®</sup> PR-3606 (Polyol) / PH-3905 (Isocyanate)

## Prototyping System

### Fast curing, two component Polyurethane

PC - Rev.-Status: 01- 2009/06/26

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**Key Properties**

- Simulates ABS / PP
- High temperature resistance (135°C)
- Good green strength at RT cure
- Fast demold time

**Applications**

- Functional prototype parts
- Short run production
- Rapid Prototyping

**Processing Properties**

|                    |          |                   | PR-3606           | PH-3905 |
|--------------------|----------|-------------------|-------------------|---------|
| Color              | visual   |                   | Black             | Brown   |
| Mix ratio          |          | pb weight         | 100               | 100     |
|                    |          | pb volume         | 100               | 85      |
| Density            | ISO 1183 | g/cm <sup>3</sup> | 1.04              | 1.22    |
| Viscosity at 25 °C | ISO 2555 | m Pa.s            | 1200-1600         | 150-200 |
|                    |          |                   | PR-3606 / PH-3905 |         |
| Pot life at 25 °C  |          | sec               | 65                |         |
| Layer thickness    |          | mm                | 4                 |         |
| Demold time (RT)   |          | min               | 15-20             |         |

**Cured / Mechanical Properties**

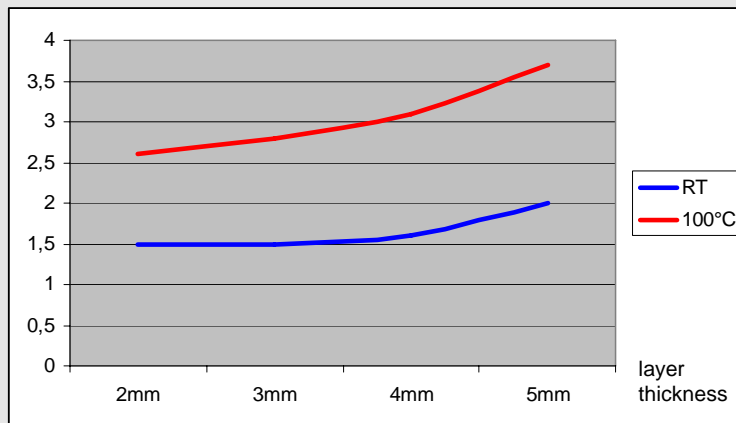
| <b>Cure:</b><br>after initial hardening post cure in steps up to 100°C |               |                       | PR-3606 / PH-3905 |
|--|---------------|-----------------------|-------------------|
| Appearance   | visual        |                       | Black             |
| Density  | ISO 1183      | g/cm <sup>3</sup>     | 1.18              |
| Shore hardness D   | ISO 868       |                       | 80-85             |
| Deflection temperature, HDT  | ISO 75        | °C                    | 130-135           |
| Tensile strength   | ISO 527       | MPa                   | 50-55             |
| Elongation at break  | ISO 527       | %                     | 10-15             |
| Flexural strength  | ISO 178       | MPa                   | 85-90             |
| Flexural modulus   | ISO 178       | MPa                   | 1800-2000         |
| Impact strength Charpy (edgewise)                                      | ISO 179-1/1eU | KJ/m <sup>2</sup>     | 35-40             |
| Tear strength  | DIN 53515     | N/mm                  | -                 |
| Abrasion   | Taber         | mm <sup>3</sup> /100R | 60-65             |
| Linear shrinkage   |               | mm / m                |                   |

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Linear shrinkage mm/m

**Processing**

**The processing and material temperature should be between 20-25 °C.**

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.

**Packaging**

|                    |                                  |
|--------------------|----------------------------------|
| RAKU-TOOL® PR-3606 | 5 kg / 25 kg                     |
| RAKU-TOOL® PH-3905 | 6 x 0.5 kg / 4 kg / 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.