

Polyurethane Casting System

Two component, vacuum casting

Key Properties

- Simulate PP / ABS
- Temperature resistant at 230°F (110°C)
- Good impact strength

Applications

- Functional prototype parts
- Short run production
- Rapid prototyping

Processing Properties

| | | | PC-3435 | PH-3935 |
|--------------------------|-------------|---|-----------------|-----------------|
| Color | visual | | Black | Clear |
| Mix ratio | | pb weight | 100 | 125 |
| Density | ASTM D-792 | lb/ft ³ (g/cm ³) | ca. 69.9 (1.12) | ca. 73.0 (1.17) |
| Viscosity at 77°F (25°C) | ASTM D-2393 | cP | 250-350 | 1000-1200 |

| | | | PC-3435 / PH-3935 |
|------------------------------|-------------|-----|-------------------|
| Mix viscosity at 77°F (25°C) | ASTM D-2393 | cP | 800-900 |
| Pot life at 77°F (25°C) | 100 ml | min | 6-8 |
| Demold time at 77°F (25°C) | | min | 60 |

Cured / Mechanical Properties

| Cure: 2 days at 77°F (25°C) | | | PC-3435 / PH-3935 |
|--|---------------|--|-----------------------|
| Aspect | visual | | Black |
| Density | ASTM D-792 | lb/ft ³ (g/cm ³) | ca. 75 (1.2) |
| Shore D hardness | ASTM D-2240 | | 78 – 83 |
| Coefficient of thermal expansion | ASTM D-3386 | 10 ⁻⁶ F ⁻¹ (10 ⁻⁶ K ⁻¹) | 61 – 72 (110 – 130) |
| Glass Transition Temperature, T _g | DSC | °F (°C) | 230 – 248 (110 – 120) |
| Deflection temperature, HDT | ASTM D-648 | °F (°C) | 203 – 212 (95 – 100) |
| Flexural strength | ASTM D-790 | psi | 10,900 – 11,600 |
| Flexural modulus | ASTM D-790 | psi | 232,000 – 247,000 |
| Impact strength Charpy (edgewise) | ISO 179-1/1eU | KJ/m ² | 35 – 40 |



Processing

The processing and material temperature should be between 68-77°F (20-25°C).

The A component needs to be stirred well before use as some fillers might be prone to sedimentation.

Mix the two components thoroughly in the ratio indicated under vacuum for 45 seconds.

Pour into preheated silicone mold at 158°F (70°C).

Cure at 158°F (70°C) for 1 hour before demolding.

Post cure as follows – 1 hr at 158°F (70°C) + 1 hr at 212°F (100°C) + 12 hr at 230°F (110°C)

Packaging

RAKU® TOOL PC-3435

7.6# in 1 gallon F style plastic bottle, 40 pounds in 5 gallon plastic pail

RAKU® TOOL PH-3935

9.6# in 1 gallon F style plastic bottle, 40 pounds in 5 gallon plastic pail

Storage

Original containers should be kept tightly sealed and stored at ambient temperatures 59-86°F (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.
