RAKU® TOOL PC-3458 (Resin) / PC-3459 (Resin) / PH-3958 (Isocyanate)

Casting System

Two component Polyurea Systems

Key Properties

- Excellent abrasion resistance, high number of castings
- High impact strength
- Components are not toxic
- No/little sand adhesion
- Can be cast by hand or machine dependent on system choice
- Good imprint accuracy

Applications

- Foundry patterns
- Pattern plates
- Core boxes

Processing Properties

			PC-3458	PC-3459	PH-3958
Color	visual		Orange	Beige	Colorless
Mix ratio		pb weight	100		500
				100	250
		pb volume	100		588
				100	290
Density	ASTM D-792	lb/ft³ (g/cm³)	ca. 79 (1.26)	ca. 74 (1.18)	ca. 64 (1.02)
Viscosity at 77°F (25°C)	ASTM D-2393	cP	450-550	100-150	12,000-13,000
Viscosity at 104°F (40°C)	ASTM D-2393	cP	100-200	n/a	3,500-4,000

			PC-3458 / PH-3958	PC-3459 / PH-3958
Mix viscosity at 77°F (25°C)	ASTM D-2393	cP	9,000-11,000	7,000-9,000
Mix viscosity at 104°F (40°C)	ASTM D-2393	cP	3,000-3,500	n/a
Pot life at 77°F (25°C)	1000 ml	min	10-15	15-20
Pot life at 104°F (40°C)	1000 ml	min	7-8	n/a
Max. layer thickness		in	0.4	0.4
Demold time		h	16	24

Cured / Mechanical Properties

Cure: 7 days at RT or 14h at 104°F (40°C)			PC-3458 / PH-3958	PC-3459 / PH-3958
Appearance	visual		Orange	Beige
Density	ASTM D-792	lb/ft³ (g/cm³)	ca. 74 (1.18)	ca. 74 (1.18)
Shore D hardness	ASTM D-2240		60-70	55-65
Deflection temperature, HDT	ASTM D-648	°F (°C)	194-203 (90-95)	140-149 (60-65)
Abrasion	Taber	mm³/100R	20-25	30-35
Linear shrinkage*	Taber	mm/m	ca. 0.01	ca. 0.01

*Measured on maximum layer thickness as stated above

Processing: RAKU® TOOL PC-3458 / PH-3958

The processing and material temperature should be around 104°F (40 °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.
A post cure of 14h at 104°F (40°C) is necessary.

Processing: RAKU® TOOL PC-3459 / PH-3958

The processing and material temperature should be between 68-77°F 104°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 carefully avoiding any air entrapment.
Degassing and /or post-curing will improve final properties.

Packaging

RAKU® TOOL PC-3458	5 kg, 1 kg
RAKU® TOOL PC-3459	2 kg
RAKU® TOOL PH-3958	25 kg, 5 kg

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.

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