RAKU® TOOL

PC-3458 / PC-3459, PH-3958

Casting Resin

Two component polyurea system

Key Properties

- Very high abrasion resistance
- High number of castings
- High impact resistance
- Components are nontoxic
- 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

		Unit	PC-3458	PC-3459	PH-3958
Color	visual		orange	beige	colorless
Mix ratio	-	pbw	100	-	500
Mix ratio	-	pbw	-	100	250
Mix ratio	-	pbv	100	-	588
Mix ratio	-	pbv	-	100	290
Density	DIN 2811-1	g/cm³	ca. 1.26	ca. 1.18	ca. 1.02
Viscosity at 25 °C	DIN 53019-1	mPa·s	500 - 700	100 - 150	12,000 - 13,000

		Unit	PC-3458 / PH-3958	PC-3459 / PH-3958
Mix viscosity at 25 °C	DIN 53019-1	mPa·s	9,000 - 11,000	7,000 - 9,000
Mix viscosity at 40 °C	DIN 53019-1	mPa·s	3,000 - 3,500	-
Pot life at 25 °C	1000 ml	min	10 - 15	15 - 20
Pot life at 40 °C	1000 ml	min	7 - 8	-
Max. layer thickness		mm	10	10
Demold time		h	16	24

Cured / Mechanical Properties

Cure		Unit	PC-3458 / PH-3958 7 days at RT or 14h at 40°C	PC-3459 / PH-3958 7 days at RT or 14h at 40°C
Color		visual	orange	beige
Density	ISO 1183	g/cm³	ca. 1.18	ca. 1.18
Hardness	ISO 868	Shore D	60 - 70	55 - 65
Deflection temperature, HDT	ISO 75	°C	90 - 95	60 - 65
Abrasion	Taber	mm³/100R	20 - 25	30 - 35
Linear shrinkage*		mm/m	ca. 0.01	ca. 0.01

*measured on maximum layer thickness as stated above

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Processing

Processing: RAKU® TOOL PC-3458 / PH-3958
The processing temperature and material temperature should be around 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 thermal post-cure of 14h at 40°C is necessary
Processing: RAKU® TOOL PC-3459 / PH-3958
The processing temperature 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.
Mix the two components thoroughly in the ratio indicated.
Degassing and / or post curing will improve final properties.

Packaging	
RAKU® TOOL PC-3458	5 kg, 1,0 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 (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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