

## Provisional Technical Data Sheet

### RAKU-PUR<sup>®</sup> 21-2560-7

### Electrical casting resin

### Flammability UL94 V0

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#### Description

**RAKU-PUR 21-2560-7 casting resin** is polyurethane based, solvent free, two-component system. It consists of a filled resin component A and a MDI hardener component B.

It is characterized by:

- Good thermal endurance
- High thermal conductivity
- Flammability UL 94 V0 6mm File 111148
- GWFI: 900°C 2,2mm
- Good thermal shock resistance
- Low water absorption and good hydrolysis resistance
- The use of non-abrasive fillers enables the processing to be carried out using standard two-component mixing and metering facilities
- RoHS conform

#### Application

The system is particularly suitable for the encapsulation of electrical and electronic parts e.g. electronic circuits, passive components, capacitors, sensors.

#### Processing

Before use, component A should be well stirred, since the filler is somewhat prone to sedimentation. For manual processing, one should ensure careful mixing after introducing the hardener, while preventing the inclusion of air.

#### Raw material data

	Unit	RAKU-PUR <sup>®</sup> 21-2560-7 A	RAKU-PUR <sup>®</sup> 21-2560-7 B
Viscosity at 20 °C      DIN EN ISO 2884-1	mPa*s	7.000 ± 1000	190 ± 20
Spec. gravity at 20 °C	g/ml	1,67 ± 0,01	1,23 ± 0,01
Color		Black	Brown

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**Processing data**

	Unit	
Mixing ratio, by weight A : B	PbW	100 : 20
Mixing ratio, by volume A : B	PbV	100 : 27,2
Mix viscosity at 20 °C (DIN EN ISO 2884-1)	mPa*s	2.400 ± 200
Processing temperature	°C	at least 20
Pot life at 20 °C	minutes	65 - 75

**Processing under vacuum**

The casting resin is ready to be applied under vacuum. The necessary process parameter must be determined in cooperation with the plant manufacturer.

**Hardening conditions**

After expiry of the working life, the progressive hardening reaction results first of all in gelling and then in solidification of the casting resin. Finally, a dimensionally stable body is formed, whose mechanical strength allows it to be removed from the mould.

The hardening process is only completed when further hardening time produces no appreciable improvement of e.g. the mechanical properties, or any increase in the second order transition temperature.

Hardening takes place at mould temperatures of 20 - 60 °C. Post curing above the glass transition temperature is necessary to achieve the final material properties.

**Mechanical properties**

Spec. gravity	DIN 53 479	g/ml	1,58 ± 0,01
Hardness	DIN 53 505	Shore D	83 - 87
Flexural strength	DIN EN ISO 178	MPa	55 - 60
Deflection	DIN EN ISO 178	mm	2,5 - 3,0
Tensile strength	DIN EN ISO 527-1	MPa	30 - 35
Elongation	DIN EN ISO 527-1	%	2,5 - 3,0
Impact resistance	DIN EN ISO 179	mJ/mm <sup>2</sup>	8 - 10
Compression strength	DIN EN ISO 604	MPa	65 - 70
Flammability	UL 94	Level / mm	V0 / 6mm
GWFI	IEC 60695-2-12	°C / mm	900 / 2,2mm

at 20°C

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**Thermal mechanical properties**

Thermal linear coefficient (30 – 80°C)	DIN 53 752	10 <sup>-6</sup> /K	50 - 110
Heat deflection temperature (HDT-B)	DIN 53 458	°C	ca. 44
Glass transition temperature (DSC)	DIN 53 445	°C	ca. 40
Thermal conductivity	DIN 52 612	W/(m*K)	ca. 0,65
Operating temperature		°C	-40 +130

**Electrical properties**

Dielectric strength	IEC 243	kV/mm	25
Dielectric constant at 20 °C and 50 Hz	DIN 53 483		4,6
Dielectric loss factor at 20 °C an 50 Hz	DIN 53 483		0,022
Volume resistivity	DIN 53 482	Ω*cm	2*10 <sup>15</sup>
Superficial resistivity	DIN 53 482	Ω	1*10 <sup>14</sup>
Tracking resistance	IEC 112	Stage	CTI 600

**Storage**

Original packaging can be stored in temperature stabilized rooms (18 °C - 25 °C) for six months. Both components are moisture-sensitive and should therefore be kept tightly closed.

**Standard packaging**

	Component A	Component B
Drum	250 kg	250 kg
Pail / Can	30 kg	30 kg

**Health and safety at work**

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.