Provisional Technical Data Sheet

RAKU-PUR® 21-2040 Schwarz

Electrical casting resin

Description

RAKU-PUR 21-2040 casting resin is polyurethane based, solvent-free, pourable two-component system. It consists of a filled resin (component A) and an MDI hardener (component B).

It is characterized by:

- Low mixture viscosity.
- Low shrinkage and low stress curing due to the weakly exothermic reaction.
- High resistance to mechanical and electrical influence.
- Low water absorption and good hydrolysis resistance.
- Good thermal endurance.
- The use of non-abrasive fillers allows for use of standard two component mixing and dispensing machines.
- RoHS compliant.

Application

The system is particularly suitable for the encapsulation of electrical insulated parts, switch parts and transformers with high thermal and mechanical loads.

Processing

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

Raw material data

	Unit	RAKU-PUR® 21-2040 A	RAKU-PUR® 21-2040 B
Viscosity at 20 °C	mPa*s	2,600	190
Spec. gravity at 20 °C	g/ml	1.46	1.23
Color		Black	Brown

Processing data		
	Unit	Value
Mixing ratio, by weight A : B	PbW	100 : 20
Mixing ratio, by volume A : B	PbV	100 : 23,7
Mixture viscosity at 20 °C	mPa*s	1,800
Processing temperature	°C	at least 18
Pot life at 20 °C	Min.	50

Processing under vacuum

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

Hardening conditions

After the end of the working life, the curing process results first of all in gelling and then in solidification of the casting resin. Finally, a dimensionally stable body is formed, the mechanical strength of which allows it to be removed from the mould.

The curing process is only completed if no longer curing time due to lead to a step of e.g. the mechanical properties, or an increase in the glass transition temperature.

Curing 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	RPV-4	g/ml	1,42
Hardness	RPV-10	Shore D	37
Tensile strength	DIN EN ISO 527-2	MPa	5,5
Elongation	DIN EN ISO 527-2	%	51

at 20°C

Thermal mechanical properties			
Thermal linear coefficient (30 – 80°C)	ISO 11359	10^{-6}/K	105 - 160
Glass transition temperature (DSC)	ISO 11357	°C	0
Thermal conductivity	ASTM D 5930	W/(m*K)	0,5
Operating temperature	-	°C	-40 to +130

Electrical properties			
Dielectric strength	IEC 60243.1	kV/mm	~28
Dielectric constant at 20 °C and 50 Hz	IEC 60250		6,8
Dielectric loss factor at 20 °C and 50 Hz	IEC 60250		0.09

Storage

Original packaging can be stored at temperature between (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	270 kg	250 kg
Pail / Can	30 kg	30 kg

Occupational Health and safety at work

Good workplace ventilation is to be ensured during processing. At the same time, the hygiene regulations set up by occupational insurance association regarding the handling of reaction resins and their hardeners are to be observed. Please take heed of the relevant safety data sheets.

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