RAMPF discover the future

Technical Data Sheet
RAKU-PUR® 21-2350
Electrical casting resin
Flammability UL94 V0

Description

RAKU-PUR 21-2350 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:

- Good thermal endurance
- Low mixture viscosity
- Good thermal shock resistance
- Low shrinkage and low stress curing due to the weakly exothermic reaction
- RoHS compliant
- Low water absorption and good hydrolysis resistance
- Good resistance to mechanical and electrical influences
- The use of non-abrasive fillers allows for use of standard two component mixing and dispensing machines
- Flammability UL 94 V0 3mm File 111148

Application

The system is particularly suitable for the encapsulation of electrical and electronic parts e.g. relays, passive components, DC/DC converter, and electronic circuits.

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® 21-2350 A	RAKU-PUR® 21-2350 B
Viscosity at 20 °C	DIN 53019	mPa*s	4,000 ± 500	300 ± 50
Spec. gravity at 20 °C		g/ml	1.58 ± 0.01	1.23 ± 0.01
Color			Black	Brown

Processing data		
	Unit	Value
Mixing ratio, by weight A : B	PbW	100 : 16
Mixing ratio, by volume A : B	PbV	100 : 20,6
Mixture viscosity at 20 °C	mPa*s	2,500 ± 200
Processing temperature	°C	at least 18
Pot life at 20 °C	Min.	40 - 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	ISO 1183	g/ml	1,52 ± 0,01
Hardness	ISO 868	Shore D	45 – 50
Tensile strength	DIN EN ISO 527-2	MPa	4 – 6
Elongation	DIN EN ISO 527-2	%	30 - 45
Flammability	UL 94	Level / mm	V0/3mm

at 20°C

Thermal mechanical properties			
Thermal linear coefficient (30 – 80°C)	ISO 11359	10^{-6}/K	78 - 139
Glass transition temperature (DSC)	ISO 11357	°C	10
Thermal conductivity	DIN EN 993-14/ 993-15	W/(m*K)	0,84
Operating temperature	-	°C	-40 to +130

Electrical properties			
Dielectric strength	IEC 60243.1	kV/mm	24
Dielectric constant at 20 °C and 50 Hz	IEC 60250		6,2
Dielectric loss factor at 20 °C and 50 Hz	IEC 60250		0.095
Volume resistivity	IEC 60093	Ω*cm	$1,4*10^{14}$
Superficial resistivity	IEC 60093	Ω	$4*10^{12}$
Tracking resistance	IEC 112	Stage	CTI 600

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
Container/IBC	1,500 kg	1,250 kg
Drum	300 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.

RAMPF Giessharze GmbH & Co. KG
Robert-Bosch-Str. 8-10 • D-72661 Grafenberg
T +49 (0) 7123 9342-0
F +49 (0) 7123 9342-1255
E info@rampf-giessharze.de
www.rampf-giessharze.de