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Technical Datasheet

RAKU-POX® 22-1010 A black + 22-110 B

Electro casting resin

Flammability UL94 V0

Description

RAKU-POX 22-1010 is a cast able two-component epoxy resin. It consists of a filled resin component A and an amine hardener component B. The system contains no solvents or halogenated hydrocarbons.

It is characterized by:

- Low mixing viscosity
- Low water absorption and good hydrolysis resistance
- High thermal endurance
- Low-shrinkage, low-stress curing through reduced exothermic activity
- High thermal conductivity
- RoHS conform
- Flammability UL 94 V0 3mm File E111148
- The use of non-abrasive fillers enables the processing to be carried out using standard two-component mixing and metering facilities

Application

The system is particularly suitable for the encapsulation of electrical insulated parts with thermal and mechanical loads. e.g. motors

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-POX® 22-1010 A	RAKU-POX® 22-110 B
Viscosity at 25 °C	DIN ES ISO 2884-1	mPa*s	12.000 ± 3.000	25 ± 15
Spec. gravity at 20 °C	DIN 53479	g/ml	1,75 ± 0,01	0,99 ± 0,01
Color			Black	Colorless

Processing data			
		Unit	
Mixing ratio, by weight A : B		PbW	100 : 13
Mixing ratio, by volume A : B		PbV	100 : 23
Mixture viscosity at 25 °C	DIN EN ISO 2884-1	mPa*s	1.600 ± 300
Mixture viscosity at 60 °C	DIN EN ISO 2884-1	mPa*s	350 ± 50
Processing temperature		°C	at least. 20
Pot life (200ml,25°C)		minutes	60 - 90
Exothermic Peak 200 ml		°C	Tbd.

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. Full hardening at room temperature is achieved after approx. one week, and after approx. 12 hours at 60 °C.

Mechanical properties			
Spec. gravity	DIN 53 479	g/ml	1,61 ± 0,01
Hardness	DIN 53 505	Shore D	85 - 90
Tensile strength	DIN EN ISO 527-2	MPa	55 ± 5
Elongation	DIN EN ISO 527-2	%	1 – 2
Flammability	UL 94	Level / mm	V0 / 3

Thermal mechanical properties			
Linear coefficient of thermal expansion (40 - 100 °C)	DIN 53 752	10^{-6}/K	40 -100
Glass transition temperature (DSC)	DIN 53 445	°C	45 - 55
Thermal conductivity	DIN 52 612	W/(m*K)	approx. 0.97
Operating temperature	-	°C	-40 +155

Electrical properties			
Dielectric strength	IEC 243	kV/mm	25 - 30
Dielectric constant at 20°C and 50 Hz	DIN 53 483	----	5,2
Dielectric loss factor at 20°C and 50 Hz	DIN 53 483	----	0,08
Volume resistivity	DIN 53 482	Ω*cm	$2*10^{15}$
Surface resistance	DIN 53 482	Ω	$1*10^{14}$
Tracking resistance	IEC 112	Stage	CTI 600

Storage

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

Standard containers	Component A	Component B
Drum	250 kg	200 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.

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