

TECHNICAL DATASHEET Epoxy Resin PX314R

Description

PX314R is a general purpose, flame retardant encapsulating resin which because of its wide range of good properties and low cost, has proved to be one of our most popular resins.

PX314R is a relatively low viscosity, flame retardant casting resin that has been specifically formulated for use in the electronics industry where components are required to meet BS415 or UL94V-0.

Features

Excellent insulation characteristics
High dimensional stability
Flame retardant UL94V-0 @ 3mm
Hot or cold curing
Low coefficient of expansion
High thermal conductivity
RoHS & WEEE Compliant

Specification

Property	Resin RX314R	Hardener HX314R	Mixed PX314R
Colour	Beige	Black	Black
Specific Gravity g/ml	1.9	0.90	1.8
Viscosity m.Pa.s @ 25°C	20000	50	9000
Mix Ratio by Weight	17.0: 1		
Mix Ratio by Volume	8.4: 1		
Useable Life (150g @ 25°C)	90 minutes		
Gel time (150g @ 25°C)	360 minutes		

Approvals

RoHS compliant	Yes
UL94-V0	Yes
REACH (SVHC concentration)	0%

Cure Schedule

Initial Cure	Full Cure
24 hrs @ 25°C	7 days @ 25°C
4 hrs @ 60°C	6 hrs @ 60°C
2 hrs @ 80°C	3 hrs @ 80°C
1 hr @ 100°C	2 hrs @ 100°C

Typical Properties

Peak Exotherm (150g @ 25°C)	50
Shrinkage % (volume)	0.3
Thermal Conductivity (W/mK)	0.65
Operating Temperature	- 40 to + 150°C short term - Application and geometry dependant
Electric Strength kV/mm	18
Volume Resistivity ohm-cm	14
Shore D Hardness	90
Flammability	UL94V-0
Tensile Strength (mPa)	60
Compressive Strength (mPa)	80
Heat Deflection Temperature	60°C
Coefficient of Expansion (ppm/°C)	35 - 45
Loss Tangent (Tanδ) @ 50 Hz	0.045
Permittivity (ε) @ 50 Hz	5.9
Continuous Tracking Index V	> 850
Water Absorption (30 days @ 20°C)	0.6%
Elongation at Break	2 - 3%
Tracking Time/Voltage	200 / 3.25 min/kV
Oxygen Index	33%

Systems cured below 40°C will exhibit inferior electrical and mechanical properties.

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Buy On-line: www.resins-online.com

Packaging

PX314R is available in Bulk, Twinpacks & kits

Availability:

Available through sales@robnor.co.uk

Twinpacks

Twinpacks are pre-weighed resin and hardener contained in a tough flexible film, separated by a removable clip and rail.

Once the clip and rail is removed the resin and hardener can be thoroughly mixed within the bag and is then ready for use.

Mixing will normally take ~ 3 minutes depending on the operator and viscosity of the material.

Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use.

Light sediment may be re-dispersed by carefully warming (to avoid distortion of the clip and rail) and kneading the pack.

The twinpack weight /volume may also be tailored to a specific size on request.

The use of twinpacks results in reduced chemical handling and less environmental impact as the waste product is inert.

For further details please visit www.robnor.co.uk

Bulk Material

PX314R is a filled system and formulated to avoid sedimentation.

If sediment is found after storage, this must be re-dispersed in the original container before use.

Failure to do so may result in defective product.

Long-term sedimentation will be aggravated by storage above 25°C and should be avoided.

In bulk or kit form gentle mixing with a paddle or spatula will homogenise the material.

In bulk or kit form evacuation may be necessary for best results.

Kits

In kit form, resin and hardener are provided in separate containers to the correct ratio.

In most cases, pour the hardener into the larger resin container and use it as a mixing vessel.

Stir well using an appropriate mixer until homogeneous.

Note: Incomplete mixing will be characterised by variable or partial cure (even after extended time periods).

Cleaning

All equipment contaminated with mixed material should be cleaned before the material has hardened.

TS130 is suitable non-flammable cleaning agent, although other solvents may be found suitable.

TS130 will also remove cured material provided it is allowed to soak for a number of hours.

Storage and Shelf Life

Material stored in the original unopened containers under cool dry condition between 10 and 25°C will have a shelf life of at least one-year.

Once used the containers must be kept sealed to prevent effects from water, air or contaminants.

Health and Safety

Epoxy resin systems may cause sensitisation by skin contact or inhalation may be corrosive, harmful or toxic.

It is therefore strongly recommended that skin and eye contact is avoided by the using of appropriate personal protective equipment such as gloves, safety glasses or goggles and overalls.

Wash any contamination from the skin immediately and thoroughly and do not eat, smoke or drink in the working vicinity.

Under normal working conditions a good source of ventilation is adequate, however if the material is heated then local exhaust ventilation (LEV) may be required especially for curing ovens.

The above is given as a guide only; please refer to RX/HX314R Health and Safety data or our Technical Service Department for individual/specific advice.

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