



BS5750
Part 1 Approved
Certificate No. FM 860

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DATASHEET FOR ROBNOR EPOXY RESIN PX700K

PX700K is a general purpose, flame retardant, potting and encapsulating resin. Having a "Corrosive" label, it has been developed as an alternative to the popular Robnor PX314ZG resin which has now been re-classified as "Toxic" (skull and crossbones) under EEC regulations. The new system therefore has the same volume mix ratio to satisfy Dispensing Machine users.

Approved to UL 94V-0 at 1.5mm thickness, the system exhibits a good cosmetic finish, high electrical strength and high thermal conductivity. Low exothermic temperature rise and low shrinkage give good protection to electronic and electrical components during cure, while the semi-flexibility of the cured material permits thermal expansion without stress as well as compatibility with most printed circuit board components and materials. Adhesion to most substrates is superb.

A combination of low viscosity with a long usable life and gel period allows ample time for any entrapped air within the component to escape before gellation occurs.

The system cures at warm room temperature but cure speed can be accelerated by oven curing at up to 100°C.

The standard (and most economical) colour is black. However the same UL 94V-0 approval also applies to any other colour.

The system is supplied in twin-packs, bulk or in kit form.

METHOD OF USE

Twinpacks:

Twinpacks contain evacuated resin and hardener to the correct ratio and are ready for use immediately after mixing. See separate mixing instructions.

Bulk Material

The resin has been formulated to minimise sedimentation. Any sediment which may have occurred through long-time storage should be dispersed either by rolling the can or stirring with a broad-bladed spatula. This operation, if necessary, should be carried out BEFORE removal of any material from the can. Long-term sedimentation will be aggravated by storage at high temperatures and this should therefore be avoided.

If in bulk form the resin and hardener are mixed in the ratio:-

By Weight 9.4 Resin : 1 Hardener
By Volume 5.3 Resin : 1 Hardener

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Robnor 

Registered in England No. 664718 Established 1960

The resin is supplied in fully degassed condition and care should be taken when mixing with hardener not to stir in large amounts of air. If this is unavoidable, the mixed resin and hardener should be re-evacuated before use.

Mixing and dispensing machines are available from Robnor Resins which will mix resin and hardener in the correct proportions without any risk of introducing entrapped air.

Kits

In kit form, resin and hardener are provided in separate containers to the correct ratio. In most cases the hardener is simply poured into the resin can and the contents then thoroughly mixed.

CHARACTERISTICS OF RESIN AND HARDENER

	<u>Value</u>	<u>Standard</u>
Colour of Resin	: Black	"
Colour of Hardener	: Clear	"
Colour of Mixed System	: Black	"
Density of Resin	: 1.80 gcm ³	Robnor
Density of Hardener	: 1.01 gcm ³	"
Density of Mixed System	: 1.67 gcm ³	"
Viscosity of Resin	: 890 poise $\pm 20\%$ (T=25°C, Spd 6, 5 rpm)	ISO 2555
Viscosity of Hardener	: 4 poise $\pm 20\%$ (T=20°C, Spd 6, 20 rpm)	"
Viscosity of Mixed System	: 125 poise $\pm 20\%$ (reading taken after 4mins from start of mixing - (T=25°C, Spd 6, 5 rpm)	"
Usable Life	: 2 hrs $\pm 20\%$ @ 25°C (250g)	Robnor
No Flow Gel	: 6 hrs $\pm 20\%$ @ 25°C (250g)	"
Suggested Cure Schedules (Minimum cure for light duty)	: 24 hrs $\pm 20\%$ @ 25°C (250g) 2 hrs $\pm 20\%$ @ 60°C (250g) $\frac{1}{2}$ hr $\pm 20\%$ @ 100°C (250g)	"

CHARACTERISTICS OF RESIN AND HARDENER (Contd.)

	<u>Value</u>	<u>Standard</u>
Cure Time to attain <u>Maximum</u> properties	: 2-7 days @ 25°C 4 hrs @ 60°C 2 hrs @ 100°C	Robnor
Shore D Hardness	: 75 ±10% after 3 hrs @ 60°C.	ISO 868: 1978
Operational Temp	: -40°C to +115°C Continuous : -40°C to +130°C Short Term	Robnor

CHEMICAL CHARACTERISTICS

Flame Retardancy	: UL94 V-0 @ 1.5mm	UL 94
Limiting Oxygen Index	: 38%	ISO 4589: 1984
Water absorption	: After 7 days @ 23°C 0.46%	BS2782 Part 4

PHYSICAL CHARACTERISTICS

Heat Deflection Temperature	: Ambient	ISO 75 : 1987
Thermal Conductivity	: 1.0 W/m°K	BS 874 : 1986
Tensile Strength	: 7.5 N/mm ²	BS 2782: 1976
Compressive Yield Strength	: >15.9 N/mm ²	BS 2782: 1979
Flexural Strength	: Semi-flexible	

ELECTRICAL CHARACTERISTICS

Volume Resistivity	: 12.98 Log ₁₀ ohm cm	BS 6233: 1982
Surface Resistivity	: 13.90 Log ₁₀ ohm	BS 6233: 1982
Electric Strength	: 14.2 kv/mm	IEC 243-1: 1988
Permittivity	: 2.86 @ 100Hz 2.76 @ 1KHz 2.69 @ 10KHz	BS 4542: 1970

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N.B. The foregoing results do not constitute a specification and are quoted for guidance use only. >>

Cleaning of Equipment

Since uncured resin is much more easily removed than the cured material, all equipment should be cleaned before the compound has hardened. Robnor Resins TS130 is a suitable non-flammable cleaning agent, although other solvents may be found suitable.

TS130 is also effective in removing cured resins, but the removal rate is considerably slower - data on this application available on request.

Storage

See container label for storage and shelf life details. Specific advice is available on request.

CAUTION

Epoxy systems are generally quite harmless to handle, provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming into contact with the skin. The use of barrier creams or impervious gloves is advised. The skin should be thoroughly cleansed at the end of each working period, either by washing with soap and warm water or by using a resin-removing cream - use of solvents is to be avoided. Disposable paper towels - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended.

The information given is derived from tests and/or extrapolations believed to be reliable. However, the product is offered for evaluation on the understanding that the customer will satisfy himself that the product is suitable for his intended use.

Advice on specific applications will be given on request.

In order that potential users may satisfy themselves by experiment that the material meets their requirements, free-of-charge samples are readily available.

None of the data and/or recommendations contained herein are to be assumed as an inducement to infringe any patent.

The Company's liability is limited to the replacement of materials shown to be defective as delivered, or to a cash refund. We accept no liability for loss or damage brought about by the use of unsuitable or defective material, or by subjecting viable material to inappropriate conditions.

This information may be modified in the light of further test results and experience.

Our General Safety Booklet S.16 gives guidance on the safe handling requirements of this and other epoxy systems in our range.

NOTE :-

Before handling any material supplied by Robnor, users should familiarize themselves with the Health & Safety Information provided by the Company both in written correspondence and in the Robnor information sources listed hereunder :

- i) The Product Applications/Performance Data Sheets.
- ii) The labels on the product packages and containers.
- iii) The Product Health & Safety Data Sheets.
- iv) Safety Data Booklet S.16.

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