

## Technical Data Sheet Epoxy Resin PX700K

### Description

Epoxy resin PX700K is a general purpose flame retardant potting and encapsulating compound. PX700K has a long usable life and may be hot or cold cured. Approved to UL94-V0 @ 1.5mm thickness the system exhibits a good surface finish, high electrical strength, good thermal conductivity, low exotherm and low cure shrinkage. The semi-flexible nature of the system allows thermal expansion without cured stress. PX700K is compatible with most circuit board components and materials over an extended temperature range. The flame-retardants in PX700K are of a non-halogen type and do not contain heavy metals. Adhesion is excellent to most plastics and substrates. It is available in bulk, kits and twinpack form. The standard colour is black but other colours are available on request.

### Features

High electrical insulating characteristics  
Good thermal conductivity  
Low shrinkage  
High adhesion  
Flame retardant to UL94-V0 @ 1.5mm  
Good chemical and water resistance  
Meet the requirements of WEEE and RoHS

### Specification

Property	Resin RX700K	Hardener HX700K	Mixed PX700K
Colour	Black	Amber	Black
Specific Gravity g/ml	1.8	1.00	1.7
Viscosity m.Pa.s @ 25°C	80000	350	12500
Mix ratio by weight	9.4:1		
Mix ratio by volume	5.3:1		
Usable life (150g @ 25°C)	120 minutes		
Gel time (150g @ 25°C)	360 minutes		

### Approvals

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

### Cure Schedule

Minimum cure	Full cure
24 hrs @ 20°C	1 week
2 hrs @ 60°C	4 hours
1 hr @ 80°C	2 hours

The above are typical values and will vary depending on the cured mass and application. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects. For maximum properties a post cure may be required - call Robnor Technical Service Department for advice.

### Typical Properties

Peak Exotherm (150g @ 25°C)	40
Shrinkage % (Volume)	0.3
Thermal conductivity	1.00 W/mK
Operating temperature range*	-40 to +150°C - application & geometry dependent
Dielectric strength	18 kV/mm
Volume Resistivity	12 ohm.cm
Shore D hardness	80
Flame Retardancy	UL94-V0
Tensile strength	50 mPa
Compressive strength	60 mPa
Deflection temperature	50°C
Co-efficient of expansion	40 - 50 ppm/°C
Loss Tangent	0.060 @ 50 Hz
Permittivity	4.8 @ 50 Hz
Continuous tracking index	>850 V
Water absorption	0.7% (30 days @ 20°C)
Elongation at break	2-5%
Oxygen index	38
Flexural strength	Semi-flexible

Robnor Resins Ltd, Hunts Rise, South Marston Park, Swindon, Wiltshire, SN3 4TE, United Kingdom

Tel: +44 (0) 1793 823741

Fax: +44 (0) 1793 827033.

Email: [sales@robnor.co.uk](mailto:sales@robnor.co.uk)

Web: [www.robnor.co.uk](http://www.robnor.co.uk)



Buy On-line: [www.resins-online.com](http://www.resins-online.com)

### **Packaging**

PX700K is available in Bulk, Twinpacks & kits

### **Availability**

Available through [sales@robnor.co.uk](mailto: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](http://www.robnor.co.uk)

### **Bulk Material**

PX700K is a filled system and formulated to avoid sedimentation.

However, 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. Robnor

Resins 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 conditions 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/HX700K health and safety data or our Technical Service Department for individual/specific advice.

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