

PX804C-1

A general-purpose flame-retardant potting and encapsulating compound

Application

- PCB potting and encapsulation
- Capacitors
- Transformers
- Deep sea electronics

Key Properties

- Approved to UL94 V-0 @ 3.0-13mm
- High electrical insulating characteristics
- Low shrinkage
- Good thermal conductivity
- High adhesion
- Good chemical and water resistance

Description

- Basic Two-component epoxy system
- Resin RX804C-1
- Hardener HX804C-1

Physical Data (approx. – values)	Resin	Hardener	Composite
Colour	Black	Amber	Black
Specific Gravity	1.87	1.05	1.7
Viscosity (mPas) @ 25°C	70000	400	6500

Cure Schedule (300g)	Working Life	Gel Time	Light Handling	Full Cure
Temperature	(minutes)	(minutes)	(hours)	(hours)
RT	40-80	180	24	48
60°C	-	-	2	4
80°C	-	-	1	2

*RT is defined as 20-25°C

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 – Contact our technical service department for advice.

Processing

Mix ratio by weight 8.5:1
Mix ratio by volume 4.8:1

Typical Properties (16h @ RT + 6h @ 60°C)	Result	Unit
Peak exotherm (150g @ 25°C)	40	°C
Flame retardant	3.0-13mm	UL94 V-0
Volume Shrinkage	3.0	%
Thermal conductivity	0.93	W/m K
Operating temperature range	-55 to +130	°C (application & geometry dependent)
Electric strength	18	kV/mm
Hardness	80-90	Shore D
Tensile strength	17.5	MPa
Tensile Modulus	3.7	GPa
Compressive strength	60	MPa
Glass Transition Temperature	28	°C
Coefficient of thermal expansion (T<T _g)	35-45	ppm/°C
Coefficient of thermal expansion (T>T _g)	115-125	ppm/°C
Loss Tangent	0.031	@ 1KHz
Permittivity	3.9	@ 1KHz
Comparative tracking index	>850	V (Method IEC 60112)
Water absorption (30 days @ 20°C)	1.03	%
Elongation at break	1.9	%
Impact Strength (Izod, notched)	3.23	KJ/m ²
Flexural Strength	38.8	MPa
Flexural Modulus	2.02	GPa
Volume Resistivity	1.36 x 10 ¹⁴	Ohmcm
Surface Resistivity	8.64 x 10 ¹⁴	Ohm

Approvals	
RoHS compliant	Yes
UL94 V-0	E76072
REACH (SVHC concentration)	Refer to SDS

Packaging

PX804C-1 is available in Bulk, Twinpacks, kits and sets

Availability

Available through distribution and www.robnor-resinlab.com sales@robnor.co.uk

Twinpacks – Part Numbers

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

Once the clip and rail are removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use. Mixing will normally take ~ 2 minutes due to the viscosity; but pay special attention to the corners.

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

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

For further details please visit www.robnor-resinlab.com

Bulk Materials – Part Numbers

Available on request	
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Both resin and hardener are supplied in 5kg, 25kg and 200ltr drums and fully evacuated and ready for use.

Care should be taken to ensure when mixing the resins air is not entrained in the mixture.

If this is unavoidable the mixed resin and hardener should be re-evacuated before dispensing.

The bulk resin and hardener materials can be dispensed from suitable dispensing machinery, details provided by Fluid Research on request.

Kits and Sets – Part Numbers

Available on request	
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Kits and Sets are provided in separate containers to the correct ratio.

In Kit form, pour the contents of the smaller container into the larger container and use it as a mixing vessel.

Stir well using an appropriate mixer until homogeneous.

Note: Incomplete mixing will be characterised by erratic or partially incomplete cure even after extended time periods.

Cleaning

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

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

TS130 will also remove cured material provided it can soak for several hours.

Shelf-life and Storage

12 months at 25 °C Specialty packaging may be less.

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50°C) aggravate this phenomenon. Heating the individual component to 50 to 60°C while stirring can usually restore products to original state. Storage at 25 +/- 10°C is optimum for most products

Some epoxy systems are prone to settling due to high filler content and should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

Inventory should be rotated on a FIFO (first in, first out) basis.

Health and Safety

Please refer to RX/HX804C-1 Health and Safety data or our Technical Service Department for individual/specific advice.

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