

PX449TC

A thermally conductive flame retardant potting and encapsulating compound

Application

- Bonding and sealing of electrical components
- Most circuit board components
- Plastics and substrates

Key Properties

- High electrical insulating characteristics
- Non-toxic
- Low shrinkage
- High adhesion
- Flame retardant
- Good chemical and water resistance
- RoHS and WEEE compliant

Description

- Basic Two-component epoxy system
- Resin RX449TC
- Hardener HX449TC

Physical Data (approx. – values)	Resin	Hardener	Mixed
Colour	Grey	Black	Dark Grey
Specific Gravity	2.09	1.45	1.87
Viscosity (mPas) @ 25°C	Paste	Semi-thixotropic	Semi-thixotropic

Cure Schedule

Temperature	Working Life (minutes)	Gel Time (minutes)	Light Handling (hours)	Full Cure (hours)
RT	40	180	24	168
60°C	15	30	4	6
80°C	10	20	2	4

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.

Processing

Mix ratio by weight 3.0: 1
Mix ratio by volume 2.0:1

Approvals

RoHS compliant	Yes
UL94-V0	No
REACH (SVHC concentration)	0%

Typical Properties

Test	Result	Unit
Peak Exotherm (150g @ 25°C)	40	°C
Shrinkage (Volume)	0.3	%
Thermal conductivity	1.15	W/mK
Operating temperature range*	-55 to +150	°C – (application & geometry dependent)
Dielectric strength	18	kV/mm
Volume Resistivity	1.3×10^{12}	ohm.cm
Hardness	80	Shore D
Flame Retardancy	Meets requirements	UL94-V0
Tensile strength	35	MPa
Compressive strength	25	MPa
Deflection temperature	40	°C
Co-efficient of expansion	55 - 65	ppm/°C
Loss Tangent	0.045	50 Hz
Permittivity	4.99	50 Hz
Continuous tracking index	>850	V
Water absorption (30 days @ 20°C)	0.5	%
Elongation at break	3-6	%
Flexural strength	50-60	MPa

Packaging & Part Numbers

PX449TC is available in Bulk, Twinpacks, kits and sets

Availability

Available through distribution and sales@robnor.co.uk

Cartridge Mixing

Available on request

It is essential for best results that the cartridge is 'balanced' before use to ensure correct mixing. Loading the cartridge into the gun before attaching the mixer element and pumping the gun to push a small amount of the contents forward will achieve this. Wipe the excess from the cartridge tip and add the static mixer. The cartridge is now ready for use.

Twinpacks

Available on request

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 is 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.co.uk

Bulk Materials

Available on request

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 and Robnor Resins produce a range of these machines, details that can be provided on request.

Kits

Available on request

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 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 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 15° and 25°C will have a shelf life of at least two years.

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, or where vapour levels are likely to exceed the occupational exposure limits appropriate respiratory protection must be worn. Local exhaust ventilation (LEV) may be required especially for curing ovens or where large volumes of material are curing. The above is given as a guide only; please refer to RX/HX449TC Health and Safety data or our Technical Service Department for individual/specific advice.

Copyright & Warranty - Robnor Resins Limited

The results and information above does not constitute a specification and is given in good faith and without warranty. The information is derived from test/or extrapolations believed to be reliable and is quoted for guidance only. The product is offered for evaluation on the understanding the customer satisfies himself that the product is suitable for his intended by proper evaluation and testing.

Contact Details

Robnor Resins Limited
Hunts Rise
South Marston Park
Swindon SN3 4TE
United Kingdom

Tel: +44 (0) 1793 823741

Fax: +44 (0) 1793 827033

Email: support@robnor.co.uk

Web: www.robnor.co.uk

Buy Online: www.resins-online.com (UK only)