TECHNICAL DATASHEET
Polyurethane Resin EL171C

Description
EL171C is a halogen free, flame retardant, semi-rigid potting resin used in light to medium voltage electrical applications. It is specifically designed for the cost-effective encapsulation of electrical units and cable joints.
EL171C offers excellent adhesion and good water resistance.
The standard colour is black but other colours are available on request.

Features

Room temperature cure
Low cure exotherm
High impact resistance
Non-toxic
Good electrical insulation characteristics
RoHS & WEEE Compliant

Specification

Property	**Resin RL171C**	**Hardener HL171C**	**Mixed EL171C**
Colour	Black Grey	Brown Brown	Black Grey
Specific Gravity g/ml	1.72	1.24	1.65
Viscosity m.Pa.s @ 25°C	12000	200	7000
Mix Ratio by Weight	8.5: 1		
Mix Ratio by Volume	6.0: 1		
Usable Life (100g @ 25°C)	20 Minutes		
No Flow Gel Time	30 Minutes		
Approvals:			
RoHS compliant	Yes		
UL94-V0	No		
REACH (SVHC concentration)	0%		

Cure Schedule	**Minimum cure**	**Full cure**
	24 hours @ 20°C	1 week
	4 hours @ 60°C	4 hours
	2 hour @ 80°C	2 hours

Allow a minimum of 24 hrs for light duty and a minimum of 6 days for resin to achieve maximum properties at room temperature. The above cure times 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

Water Absorption	< 0.6% (30 days @ 25°C)	
Flammability	Flame Retardant	
Shore D Hardness	45	
Heat Deflection Temperature	Flexible	
Operating Temperature	- 40 to + 125°C	(application & geometry dependent)
Thermal Conductivity	0.42 W/mK	
Tensile Strength	5.3 mPa	
Compressive Yield Strength	< 10 mPa	
Coefficient of Linear Expansion	75-100 ppm/°C	
Volume Resistivity	12^{10} ohm-cm	
Surface Resistivity	12 - 14 Log_{10}ohmm	
Peak exotherm (250g @ 20°C)	40	
Shrinkage % (volume)	0.5	
Elongation at break	~30%	
Dielectric Strength	16 kV/mm	
Permittivity (∈)	3.2 @ 50 Hz	
Loss Tangent (Tanδ)	0.3 @ 50 Hz	
Comparative Tracking Index	>600	

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Packaging
EL171C is available in bulk, kit and twinpack form.

Availability:
Available through distribution and **sales@robnor.co.uk**

Twinpacks
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 ~ 1 minute for EL171C due to the low 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 Material
EL171C 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 being used.
Failure to do so may result in defective product.
Long-term sedimentation will be aggravated by storage above 25°C and should be avoided.
Light sediment may be re-dispersed by carefully warming (to avoid distortion of the clip and rail) and kneading the pack; or if in bulk or kit form gently mixing with a paddle or spatula.
In bulk or kit form evacuation may be necessary for best results.
Avoid breathing vapours produced by this process.

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 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.
Robnor Resins 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 35°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
Polyurethane 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 RL/HL171C Health and Safety data or our Technical Service Department for individual/specific advice.