

EL171C

A halogen free, flame retardant, semi-rigid potting resin used in light to medium voltage electrical applications

Application	Key Properties
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| <ul style="list-style-type: none"> Encapsulation of transformers Cable joints Wide range of substrates Low to medium voltage electrical and electronic applications | <ul style="list-style-type: none"> Room temperature cure Low cure exotherm High impact resistance Good electrical insulation characteristics |
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Description

- Basic Two-component polyurethane system
- Resin RL171C
- Hardener HL171C

Physical Data (approx. – values)	Resin	Hardener	Composite
Colour	Black Grey	Brown Brown	Black Grey
Specific Gravity	1.73	1.23	1.66
Viscosity (mPas) @ 25°C	12000-15500	200	8000-10000

Cure Schedule (250g)	Working Life	Gel Time	Light Handling	Full Cure
Temperature	(minutes)	(minutes)	(hours)	(hours)
RT*	10-15	30-60	24	168
60°C	-	-	4	4
80°C	-	-	2	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 8.47:1
 Mix ratio by volume 6.01:1

Typical Properties	Result	Unit
Water absorption (30 days @25°C)	0.6	%
Flammability	Flame retardant	
Hardness	45-50	Shore D
Heat Deflection Temperature	Flexible	
Operating Temperature	-40 - +125	°C (application & geometry dependent)
Thermal Conductivity	0.75	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 ¹⁰	ohm.cm
Peak Exotherm (150ml @ 20°C)	40	°C
Shrinkage (Volume)	0.5	%
Elongation at break	~30	%
Dielectric Strength	16	kV/mm
Permittivity (ε)	4.6	50Hz
Loss Tangent (Tanδ)	0.3	50Hz
Comparative Tracking Index	>600	v

Approvals

RoHS compliant	Yes
UL94 V-0	No
REACH (SVHC concentration)	Refer to SDS

Packaging

EL171C is available in Bulk, Twinpacks Sets & Kits

Availability

Available through distribution and sales@robnor.co.uk

Twinpacks - Part Numbers

EL171C/BK/250	EL171C/BK/1000
EL171C/BK/566	EL171C/BK/1131

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-resinlab.com

Bulk Materials - Part Numbers

RL171C/BK/1KG	HL171C/NC/1KG
RL171C/GY/5KG	HL171C/NC/5KG
RL171C/BK/10KG	HL171C/NC/6KG
RL171C/BK/25KG	HL171C/NC/25KG

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	EL171C/BK/4.5KGSET
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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.

Storage and Shelf Life

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

Bulk containers should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

Isocyanates are sensitive to moisture and should be kept in their original container or in a volume tank under dry nitrogen blanketing.

Many isocyanates are prone to dimerization, the formation of a white precipitate. Products with minor amounts of this precipitate normally cure to full properties.

Storage at 20 +/- 5°C (60°F to 86°F) is recommended to ensure full shelf life.

Health and Safety

Please refer to RL/HL171C Health and Safety data or our Technical Service Department for individual/specific advice.

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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 the intended application by proper evaluation and testing.

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