Technical Data Sheet
November 2016

EL171LF

A low viscosity, semi-rigid version of EL171H suitable for the potting and encapsulation of a wide variety of electrical and electronic devices

Application

- Potting of Electrical & Electronic devices
- Encapsulation of transformers
- Cable joints

Key Properties

- Non-toxic
- Low viscosity
- Room temperature curing
- Flame retardant to UL94 V-0
- Adhesion to a wide variety of substrates

Description

- Basic — Two-component polyurethane system
- Resin — RL171LF
- Hardener — HL171LF

Physical Data (approx. – values)			
	Resin	**Hardener**	**Mixed**
Colour	Black	Amber	Black
Specific Gravity	1.58	1.24	1.51
Viscosity (mPas) @ 25°C	10000	200-300	3500

Cure Schedule (150ml sample)				
Temperature	Working Life (minutes)	Gel Time (minutes)	Light Handling (hours)	Full Cure (hours)
RT*	15	45	24	72
60°C	-	15	2	32
80°C	-	10	1	12

*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 5.1:1
Mix ratio by volume 4.0:1

Typical Properties		
Test	**Result**	**Unit**
Flammability	Approved (follow link below)	UL94 V-0
Volume Resistivity	1.3×10^{13}	ohm.cm
Surface Resistivity	1.2×10^{12}	ohm
Electric Strength	26	kV/mm
Permittivity (∈)	4.6	1KHz
Loss Tangent (Tanδ)	0.04	1KHz
Hardness	60	Shore D
Heat Deflection Temperature	Flexible	
Operating Temperature	-40 - +130	°C (application & geometry dependent)
Comparative tracking index	>600	V
Thermal Conductivity	0.39	W/mK
Coefficient of Linear Expansion	75-100	ppm/°C
Tg	-2	°C

Approvals	
RoHS compliant	Yes
UL94 V-0	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=QMFZ2.E76072&ccnshorttitle=Plastics+-+Component&objid=1073830268&cfgid=1073741824&version=versionless&parent_id=1073827222&sequence=1
REACH (SVHC concentration)	0%

Packaging

EL171LF is available in Bulk, Twinpacks & Kits

Availability

Available through distribution and sales@robnor.co.uk

Cartridge Mixing	
Not Available	

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	
EL171LF/BK/100	EL171LF/BK/500
EL171LF/BK/250	EL171LF/BK/1000

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	
RL171LF/BK/7.5KG	HL171LF/NC/6KG
RL171LF/BK/25KG	HL171LF/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 & Sets	
Available on request	EL171LF/BK/4KGSET
	EL171LF/BK/10KGSET

Kits and Sets are provided in separate containers to the correct ratio.
In Kit form, 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

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/HL171LF Health and Safety data or our Technical Service Department for individual/specific advice.

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