

EL583C

A very high performance "self-healing" polyurethane resin system

Application

- Delicate electrical and electronic components and modules
- Transducers, Connectors, and seals
- Automotive
- Telecommunications
- Defence industries

Key Properties

- Low moisture absorption
- High water resistance
- Low viscosity
- Long usable life

Description

- Basic Two-component polyurethane system
- Resin RL583C
- Hardener HL583C

Physical Data (approx. – values)	Resin	Hardener	Composite
Colour	Translucent	Yellow	Translucent
Specific Gravity	0.96	0.93	0.95
Viscosity (mPas) @ 25°C	1200-1900	50-200	600-1000

Cure Schedule (150ml)	Working Life	Gel Time	Light Handling	Full Cure
Temperature	(minutes)	(hours)	(hours)	(hours)
RT*	30-60	2 – 4	24	72
60°C		-	12	24
80°C		-	3	6

*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 2.00:1

Mix ratio by volume 2.10:1

Approvals

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

Typical Properties	Result	Unit
Water absorption (24 hours @ 23°C)	0.06	%
Water absorption (168 hours @ 23.C)	0.21	%
Flame retardant	No	
Hardness	Soft Gel	
Thermal conductivity	0.25	W/m. K
Co-efficient of thermal expansion	150 - 200	ppm/°C
Operating temperature range	-60 to +100	°C (application & geometry dependent)
Volume Resistivity	1.4 ¹⁴	ohm.cm
Surface Resistivity	16 ¹⁰	ohm.cm
Electric strength	20	kV/mm
Dielectric constant	3.9	100 Hz
Dielectric constant	3.7	1 kHz
Dielectric constant	3.6	10 kHz
Cone Penetration (15 seconds)	10-30	mm

Short Term Thermal Endurance

EL583C is non-combustible and retains physical properties after 1-hour exposure to 150°C at 5mm thickness.

Packaging

EL583C is available in Bulk, Twinpacks & Kits

Availability

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

Twinpacks - Part Numbers

EL583C/NC/050	EL583C/NC/250
	EL583C/NC/500

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 has been 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

	EL583C/NC/1KGSET
	EL583C/NC/5KGSET

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/HL583C Health and Safety data or our Technical Service Department for individual/specific advice.

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The results and information above do 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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