

## EL420LV

A two-part, low viscosity room temperature curing polyurethane resin

### Application

- Manufacture of badges and decals
- LED Units
- High quality castings

### Key Properties

- Excellent long term UV stability
- Scratch and mark resistant
- Easy to mix and process
- Available in white

### Description

- Basic Two-component polyurethane system
- Resin RL420LV
- Hardener HL420LV

Physical Data (approx. – values)	Colour	Specific Gravity	Viscosity (mPas) @ 25°C
Resin	Water Clear White	1.07 1.10	500-1000
Hardener	Water Clear	1.13	600
Composite	Water Clear White	1.10 1.11	600-1200

Cure Schedule (200g)	Working Life (minutes)	Gel time (minutes)	Tack Free time (minutes)	Light Handling (hours)	Full Cure (hours)
Temperature RT	8-12	10-20	40	6	36
40°C	-	-	20	2	4
60°C	-	-	-	1	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 are suggested to avoid side effects. For maximum properties a post cure may be required – Contact our technical service department for advice.

Processing	Water Clear	White
Mix ratio by weight	0.92:1	0.96:1
Mix ratio by volume	1:1	1:1

### Approvals

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

Typical Properties	Result	Unit
Water Absorption (30 days @25°C)	1.17	%
Hardness	75	Shore A
Operating Temperature	- 55 to + 120	°C (application & geometry dependent)
Thermal Conductivity	> 0.20	W/mK
Tensile Strength	~15	MPa
Elongation at Break	100	%
Compressive Yield Strength	< 10	MPa
Coefficient of Linear Expansion	100-150	pp/m°C
Volume Resistivity	$1.3 \times 10^{12}$	ohm.cm
Surface Resistivity	$1.4 \times 10^{12}$	ohm
Electric Strength	20	kV/mm
Refractive Index	1.47-1.48	Clear version only

## Packaging

Available in Bulk, Twinpacks, cartridges (clear version only), & kits

## Availability

Through sales@robnor.co.uk distribution, and www.robnor-resinlab.com

### Cartridge Mixing Part Numbers

EL420LV/WW/050TC	
EL420LV/WW/200TC	

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 Part Numbers

EL420LV/WW/100	EL420LV/WW/500
EL420LV/WW/250	

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](http://www.robnor-resinlab.com)

### Bulk Materials Part Numbers

RL420LV/WW/5KG	HL420LV/WW/5KG
RL420LV/WW/25KG	HL420LV/WW/25KG
RL420LV/WW/200KG	HL420LV/WW/200KG

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

EL420LV/WW/2KGKIT	EL420LV/WW/1KGSET
	EL420LV/WW/10KGSET
	EL420LV/WW/21.5KGSET
	EL420LV/WT/10KGSET

Kits and Sets are provided in separate containers to the correct ratio.

In Kit form, pour the contents of the small 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 is allowed to soak for a number of hours.

## Storage and Shelf Life

12 months at 5 °C in cartridges that are foil bagged and desiccant packed. Store horizontally.

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.

Inventory should be rotated on a FIFO (first in, first out) basis.

## Health and Safety

Please refer to RL/HL420LV Health and Safety data or our Technical Service Department for individual/specific advice.

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