

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
- Non-toxic
- Easy to mix and process

Description

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

Physical Data (approx. – values)	Resin	Hardener	Mixed
Colour	Clear	Clear	Clear
Specific Gravity	1.06	1.16	1.11
Viscosity (mPas) @ 25°C	600	600	600

Cure Schedule (150ml sample)

Temperature	Working Life (minutes)	Gel time (minutes)	Tack Free time (minutes)	Light Handling (hours)	Full Cure (hours)
RT	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 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 0.92:1
Mix ratio by volume 1:1

Approvals

RoHS compliant	Yes
UL94 V-0	No
REACH (SVHC concentration)	0%

Typical Properties

Test	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	< 0.21	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 x 10 ¹²	ohm.cm
Surface Resistivity	1.4 x 10 ¹²	ohm
Electric Strength	20	kV/mm
Refractive Index	1.47-1.48	

Packaging

Available in Bulk, Twinpacks, cartridges, & kits

Availability

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

Cartridge Mixing Part Numbers

EL420LV/NC/050TC	
EL420LV/NC/200TC	
EL420LV/WW/400TC	

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/010	EL420LV/WW/500
EL420LV/WW/100	EL420LV/WW/1000
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 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

RL420LV/WW/1KG	HL420LV/WW/1KG
RL420LV/WW/5KG	HL420LV/WW/5KG
RL420LV/WW/10KG	HL420LV/WW/10KG
RL420LV/WW/23KG	HL420LV/WW/25KG
RL420LV/WW/184KG	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/5KGSET
	EL420LV/WW/10KGSET
	EL420LV/WW/21.5KGSET

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

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