TECHSIL PU23930 PEARL

Techsil® PU23930 is a two-part, flexible, room temperature curing polyurethane resin designed for the potting and encapsulation of LED arrays and lighting equipment. On curing, TECHSIL® PU23930 forms an opalescent finish that masks the underlying components but still retains high light transmission. TECHSIL® PU23930 has excellent outdoor weathering properties, due to the incorporation of both UV resistant base materials and the addition of UV stabilisers and antioxidants. TECHSIL® PU23930 is a flexible version of TECHSIL® PU23970.

Features:

- Excellent long term UV stability
- Scratch and mark resistant
- Non-toxic
- High mechanical strength
- Easy to mix and process

Specification:

Property	**Resin**	**Hardener**	**Mixed**
Colour	Clear	Clear	Opal
Specific Gravity g/ml	1.04	1.16	1.10
Viscosity m.Pa.s @ 25°C	600	600	600
Mix Ratio by Weight	0.90:1		
Mix Ratio by Volume	1:1		

Approvals:

RoHS compliant:	Yes
UL94-V0:	No
REACH (SCHC concentration)	0%

	Usable life (minutes)	**Gel time** (minutes)	**Tack free** (minutes)
150g @ 20°C	20	30	60

Cure schedule	**Temperature**	**Minimum Cure**	**Full Cure**
	20°C	24 hours	48 hours
	40°C	12 hours	24 hours
	60°C	6 hours	12 hours

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.

Typical Properties:

Water Absorption:	0.87% (30 days @ 25°C)
Shore D Hardness:	30
Operating Temperature:	-55 to 120°C (application and geometry dependant)
Thermal Conductivity:	0.25 W/mK
Tensile Strength:	46 MPa
Elongation at Break:	2-4%
Compressive Yield Strength:	<60 mPa
Coefficient of Linear Expansion:	60-80 pp/m°C

Contact Details

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Volume Resistivity:	< 13 $\log^9$ ohmm
Surface Resistivity:	< 14 $\log^9$ ohm
Electric Strength:	20kV / mm
Refractive Index:	1.47 – 1.48

Packaging:

Techsil® PU23930 Pearl is available in Bulk and Twinpacks

Twinpacks:

Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail. Once the clip is removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use. Mixing will normally take ~1 minute due to the low viscosity; but pay close attention to the corners. Twinpacks are ideal for small to medium production runs, prototyping and on site or field use.

Bulk Materials:

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 entrapped into 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 machinery and Techsil can supply a range of these machines.

Kits:

In kit form, resin and hardener are provided in separate containers to the correct ratio. In most cases, pour the hardener into the larger resin container and use it as a mixing vessel. Stir well using appropriate mixer until homogenous.
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. Techsil® Pronatur is a suitable cleaning agent. Epoxy stripper will remove cured material provided it is allowed to soak for a few hours.

Storage and Shelf Life:

Material stored in the original unopened containers under cool dry conditions between 15°C and 25°C will have a shelf life of at least one year. Once opened the containers must be kept sealed to prevent effects from water, air contaminants.

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