TECHNICAL DATA SHEET

U1911 A+B June 2013

Polyurethane resin

Component A	**Polyol crosslinker**	**U1911 A**
Component B	**Isocyanate prepolymer**	**U1911 B**
Mixing ratio A/B	107/100 by weight 100/100 by volume	

U1911 is a two-part, low viscosity room temperature curing polyurethane resin designed for the manufacture of badges and decals. U1911 has excellent outdoor weathering properties, due to the incorporation of both UV resistant base materials and the addition of UV stabilisers and antioxidants.

Features:

Excellent long term UV stability
Scratch and mark resistant
Non-toxic
Meets requirements of WEEE & RoHS
Easy to mix and process
RoHS compliant

Physical properties:

	Resin Part A	Hardener Part B	Mixed U1911
Colour	Clear	Clear	Clear
Specific Gravity	1.06	1.16	1.11
Viscosity m.Pa.s © 25°C	600	1200	900
Mix Ratio by Weight			1.07: 1
Mix Ratio by Volume			1.00: 1

Cure Schedule (hours)

Temperature	Initial Cure	Full Cure
À 20°C	6	24
À 40°C	2	4
A 60°C	1	2

	Usable life (mn)	Gel time (mn)	Tack Free cure time (mn)
Thin film <2mm (20°C)	15	30	120
Thick film >5mm (20°C)	6	12	20

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 –

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Typical Properties

Water Absorption	1.17% (30 days ©25°C)
Shore A Hardness	75
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/mC
Volume Resistivity	< 13 Log10ohmm
Surface Resistivity	< 14 Log10ohm
Electric Strength	20 kV/mm
Refractive Index	1.47-1.48

Cartridge Mixing

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

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 — 3 minutes due to the low 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.

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 entrained in the mixture.
If this is unavoidable, the mixed resin and hardener should be re-evacuated before dispensing.

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 an appropriate mixer until homogeneous.
Note: Incomplete mixing will be characterised by erratic/partially incomplete cure even after extended time periods.

Cleaning

All equipment contaminated with mixed material should be cleaned before the material has hardened.

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Storage and Shelf Life

Material stored in the original unopened containers under cool dry condition between 15° and 35°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 U1911 Health and Safety data or our Technical Service Department for individual/specific advice.

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