



## Technical Data Sheet

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### **Polycraft FC-3680 Black Polyurethane Casting Resin**

*Two Part Hand Casting Polyurethane System, Black.*

Polycraft FC-3680 Black fast cast resin is an odourless two component polyurethane system which is designed for rapid demould times and can be used filled or unfilled. Polycraft FC-3680 Black can be used unfilled in prototyping and model-making areas, or filled with mineral or metallic fillers in pattern-making or for thermoforming tools. Polycraft FC-3680 Black gives outstanding colour density and removes the need for black pigmentation.

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### **Special Features**

- Strong thin sections
- Good thermal resistance
- Excellent impact resistance
- Excellent dimensional stability

### **Mix Ratio**

Polycraft FC-3680 is mixed with at a ratio of 100 Part A 100 Part B by weight (eg. 100g Part A - 100g Part B).

### **Product Data**

Property	Units	FC-3680 A	FC-3680 B	Mix
Material	-	Formulated Polyol	Isocyanate	Polyurethane
Appearance	-	Black liquid	Brown liquid	Black Liquid
Viscosity (25°C)	mPa.s	300 - 500	100 - 200	250 - 450
Density (25°C)	g/cm <sup>3</sup>	0.98 – 1.03	1.10 – 1.15	1.04 – 1.09
Pot Life (25°C)	Minutes	-	-	3 - 4
Demould Time 200g 20mm, 25°C)	Minutes	-	-	60
Minimum Casting Thickness	mm	-	-	TBC
Maximum Casting Thickness	mm	-	-	TBC



### **Cured Data**

<b>Property</b>	<b>Standard</b>	<b>Units</b>	<b>FC-3680</b>
<b>Hardness</b>	BS 2782 : Part 3 : Method 365B	Shore D	70 - 75
<b>Linear Shrinkage</b>	500 x50 x 10 mm	%	< 0.2
<b>Tensile Strength</b>	BS 2982 Part 3: Method 320B	MPa	25 - 30
<b>Elongation at Break</b>	BS 2782 Part 3: Method 320B	%	6 - 9
<b>Flexural Strength</b>	BS 2782 Part 3: Method 335A	MPa	30 - 35
<b>Flexural Modulus</b>	BS 2782 Part 3: Method 335A	MPa	500 - 800
<b>Heat Distortion Temp. (HDT)</b>	TMA	°C	60 - 65

### **Method of Use**

#### **Mould Preparation**

Ensure that the mould is clean and dry and for flexible moulds, use RTV silicone rubber. If the mould is wooden, ensure the wood is well sealed with varnish and/or wax based release agent.

#### **Resin Preparation**

Shake the Part A thoroughly in order to homogenise the resin. For best results, ensure that the two components are at 20 – 25°C before mixing.

#### **Curing**

The casting can generally be demoulded in 60 minutes at room temperature. The precise demould time will vary with casting thickness, as thin section units will cure slower than thicker section units. When casting thin wall sections, ensure that the mould and resins are at least 20 – 25°C to facilitate a good cure and reduce the risk of brittleness. To reduce the cure time, the mould can be pre-warmed to 40 – 60°C. It is not recommended to heat the liquid components.



### **Mixing Instructions**

When using unfilled, add the correct amount of Part B to the Part A and stir for 30 seconds. Pour carefully in one place into the mould in order to avoid air inclusion. If using filled, we recommend the use up to 200% filler, Aluminium Trihydroxide for general bulking out and shrinkage reduction, aluminium Powder for higher temperature applications. Large quantities of material, filled or unfilled.

### **Polishing Tips**

For general polishing of a moulded part use a fine liquid polish such as Farecla G100. If a deep scratch needs to be removed then wet and dry paper should be used in the following descending grit sizes 400, 800, 1000 and 1200. A course and fine polishing paste such as Farecla G7 or G10 should then be used with G100. This information is for guidance only. To avoid distortion ensure that the material does not reach temperatures above 60°C during machining or polishing

### **Storage**

Polycraft FC-3680 A and B should be stored in original, unopened containers between 20 and 25°C. Polycraft FC-3680 B may crystallise partially or completely if not stored at above 20°C. Like all polyurethanes, both components are moisture sensitive. Moisture absorption will cause excessive aeration in cast parts. KEEP THE PACKING TIGHTLY SEALED WHEN NOT IN USE.

### **Storage**

All data listed relates to typical values. This data should not be considered a product specification. Our technical advice, whether verbal, or in writing is given in good faith, but without warranty – this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended process and use.

Before using any of our products, users should familiarise themselves with the relevant Technical and MSDS.