



Crystal Cast 300

*Two Part Bulk Casting Polyurethane System
Water Clear, UV Stable*

Crystal Cast 300 is a two component polyurethane system which is water clear when cured. Crystal Cast 300 is ideal for casting in bulk such as sculptures, embedding decorative objects and other similar applications.

Special Features

- Optically clear
- UV stable
- Polishable to a high gloss
- Low viscosity
- Easily pigmented

Mix Ratio

Crystal Cast 300A : Crystal Cast 300B

By Weight 100 : 100

Product Data

Property	Units	Crystal Cast 300A	Crystal Cast 300B	Mix
Material	-	Formulated Polyol	Isocyanate	Polyurethane
Appearance	-	Clear liquid	Clear liquid	Clear liquid
Viscosity (25°C)	mPa.s	300 – 500	50 – 100	200 – 400
Density (25°C)	g/cm ³	1.01 – 1.06	1.04 – 1.09	1.02 – 1.07
Pot Life (200g, 25°C)	Minutes	-	-	100 – 120
Recommended Casting Thickness	mm	-	-	10 – 50
Cure Time*	Hours	-	-	48

*See "Curing" section.



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Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS 2782: Part 3: Method 365B	Shore D	80 – 85
Linear Shrinkage	500 x 50 x10 mm	%	Dependant on casting size
Tensile Strength	BS 2782: Part 3: Method 320B	MPa	48.0 – 52.0
Elongation at break	BS 2782: Part 3: Method 320B	%	5.0 – 7.0
Flexural Strength	BS 2782: Part 3: Method 335A	MPa	56.0 – 60.0
Flexural Modulus	BS 2782: Part 3: Method 335A	MPa	1600 – 1800
Heat Distortion Temperature (HDT)	TMA	°C	45 – 50

Method of Use

Mould Preparation

Before use ensure that the master model from which the mould is made has the exact finish that is required in the cast or finished units, i.e. for optimum clarity polish the master model to a very high sheen. Ensure that the mould is clean and dry. If the mould is made from metal or resin, use a release agent such as Release Agent R7. For flexible moulds we recommend ALCHEMIX RTV 250 addition cure silicone rubber. Condensation cured silicone rubber should not be used with Crystal Cast 300. It may be necessary to preheat the mould to 40°C in order to prevent shrinkage at the corners and sides of the casting.

Resin Preparation

Open both A and B containers and examine for any signs of crystallization, place in the oven at 45 – 60°C if any crystals are observed. Ensure that both components are between 20 – 25°C before mixing. If using pigments, add the pigment to the part A. We suggest using 1 – 3% pigment. Tints can also be used to produce coloured parts that remain clear. Contact Alchemie's Technical Department for more information. Do not use water based pigments.

Mixing instructions



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Mix the two components at the correct ratio, mixing carefully to avoid air inclusion and making sure that the material at the sides and at the bottom of the mix vessel is well stirred in to the middle. The material may become cloudy in appearance for a few minutes, continue mixing until the liquid becomes clear. Degas for approximately 5 minutes before pouring. Pour the material into the mould in one place to reduce air bubbles. Degas again if necessary, avoid boiling the material at very high vacuum.

Curing

Crystal Cast 300 is a slow curing resin and will not cure in thin section. Exact cure cycle depend on the size and geometry of the casting. Thinner castings will take longer to cure than thicker castings, but will generally be 48 hours at 25°C. Thicker castings will tend to shrink more than thinner castings due to the amount of heat generated.

Polishing tips

Allow the casting to cure for at least 48 hours before machining or polishing. To avoid distortion ensure that the material does not reach temperatures above 60°C during machining or polishing. For general polishing of a moulded part use a fine liquid polish such as Farècla 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 Farècla G7 or Farècla G10 should then be used finishing with G100. This information is for guidance only.

Storage

Crystal Cast 300A and B should be stored in original, unopened containers between 20 and 25°C. Crystal Cast 300B 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.**

If stored under the above conditions, Crystal Cast 300A and B will have a shelf life of 3 months, from the date of production.

Packaging

Crystal Cast 300A is supplied in 5, 10 and 25 kg containers.
Crystal Cast 300B is supplied in 5, 10 and 25 kg containers.



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Ceci ne vous libère pas de votre obligation de tester les produits que nous vous fournissons quant à leur aptitude au procédé et à l'emploi prévus.

Les fiches techniques et de sécurité sont disponibles sur simple demande ;
par fax au 01 30 93 35 82 ou bien par email à info@prodemmia.fr

Toutes les indications ci-dessus sont données de bonne foi de par notre expérience et selon les essais effectués aux titres des fabrications, formulations et distributions des produits à mettre en œuvre. Il appartient cependant à l'utilisateur de s'assurer que la transformation de ces produits convient en tous points à leur destination finale.

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