

Clear Cast A & B

Fast / Medium / Slow

| | |
|--------------|---|
| Product Type | Polyurethane Water Clear Casting System |
| Resin | Clear Cast Fast/ Clear Cast Medium/ Clear Cast Slow Part A |
| Hardener | Clear Cast Part B |
| Colour | Water White Clear |

Applications

- Transparent Prototypes
- Art & Decoration Parts
- Crystal Glass Parts
- Jewelry

Properties

- UV Stable
- Impact Resistant
- High Transparency
- Easy Processing
- Casting in Various Thicknesses

Processing Data

| Product | | Resin Clear Cast Fast Part A | Resin Clear Cast Medium Part A | Resin Clear Cast Slow Part A | Clear Cast Part B |
|-------------------|---------------------|---------------------------------------|---|---------------------------------------|----------------------|
| Colour | | Pale Cloudy | Pale Cloudy | Pale Cloudy | Clear |
| Mixing Ratio | P.B.W | 100 | 100 | 100 | (100) |
| | Volume | 103 | 103 | 103 | (100) |
| Viscosity at 25°C | cps | 600 - 1000 | 600 - 1000 | 600 - 1000 | 100 - 200 |
| Density | g / cm ³ | 1.04 | 1.04 | 1.04 | 1.22 |

The components should be measured to an accuracy of 2% or better. Care should be taking when measuring by volume as this is an inherently inaccurate method unless specific volumetric measuring equipment is used.

Physical Data

| Properties | Test Method | Unit | Clear Cast Fast A/B | Clear Cast Medium A/B | Clear Cast Slow A/B |
|-------------------|-------------|-------|------------------------|--------------------------|------------------------|
| Casting Thickness | - | mm | 1 - 5 | 5 - 20 | 20+ |
| Gel Time | 50g @20°C | mins | 8 - 15 | 30 - 50 | 120 - 180 |
| | 100g @ 20°C | mins | | | |
| | 4kg @ 20°C | mins | | | |
| Demould Time | 50g @20°C | mins | 50 | 100 | 24 |
| | 100g @ 20°C | mins | | | |
| | 4kg @ 20°C | hours | | | |
| Cure Time | RT | mins | 20 | 4 | 6 |
| | @60°C | hours | | | |
| Shore Hardness | - | D | 84 | 84 | 84 |

PLEASE NOTE: The figures above are for guidance only as the mass of material mixed also has a bearing on which grade to select. These products can become very warm during cure. It is very important that the correct grade be used for the section to be cast. If in doubt use a grade that is for a thicker section than the section to be cast and complete the cure with a post cure.

Sales Units (Packages)

| | | | |
|-------|----------|--|------------------------------|
| Units | Resin | Clear Cast Fast / Medium / Slow Part A | 1.00 kg / 5.00 kg / 25.00 kg |
| | Hardener | Clear Cast Part B | 1.00 kg / 5.00 kg / 25.00 kg |

Preparation of Components

None of the components require preparation other than mixing prior to removal of any product from the containers. Any crystallisation of the Part B may be re-melted by warming to 30°C and allowing to cool again.

The components may be mixed and cast at room temperature and require no pre-warming prior to use. If the mould needs to be pre-warmed details will be given in the PREPARATION OF MOULDS section. If the product requires a post cure details will be given in the METHOD OF USE section.

Preparation of Moulds

Moulds should be clean and dry and generally a good quality release agent should be used and allowed to dry fully. For details of suitable release agents please contact **ebalta** Distribution

Moulds should require no pre-warming, though if ambient conditions are particularly cold then warming to a temperature of 15-25°C will assist the cure of the material and avoid differential shrinkage between the core and the edges of the moulding. Be aware that cold temperatures will result in longer cure and demould times.

In addition metal moulds should be warmed to 20-30°C to avoid chilling the polyurethane in contact with the mould surface, as this will result in extended demould time and may cause differential shrinkage, and surface defect problems.

Method of Use

Weighing

The components should be weighed on equipment capable of an accuracy of ±2% or better. The larger quantity (usually polyol or resin component) should be weighed into a vessel of sufficient capacity to accommodate the entire mix and allow room for mixing, and degassing if required.

All components should be weighed directly into the one vessel. Do not weigh each component into a separate vessel and then combine them, as this will not give the desired mix ratio due to losses and wastage in each container. In turn this will lead to cure problems such as incorrect cure time or hardness.

| | | | | | | |
|----------------|---|--------|---|-------------|---|----------|
| tooling resins | . | blocks | . | ancillaries | . | silicone |
|----------------|---|--------|---|-------------|---|----------|

Clear Cast A & B

Fast / Medium / Slow

Mixing

The components should be mixed together thoroughly by hand use a flat blade such as a palette knife or with a Jiffy type mixer if using a drill. The mixing should be carried out with care to avoid the inclusion of air and also to ensure that material on the sides and bottom of the vessel is removed and mixed in.

Ideally the mix should be constantly mixed under a fixed agitator, but failing this should be mixed every 10 to 15 minutes until the product turns clear. Once clear the mixture can be degassed one final time before pouring. There is plenty of time for this after the material clears, approximately 40-60 minutes.

To avoid patches of unmixed components in the finished product the mixed material may then be transferred to a second container and mixed again.

Degassing

If degassing is required it should be done immediately after mixing. It is important to remember that degassing is only possible if the material has a sufficiently long pot life or gel time to allow for mixing, degassing and pouring. In the case of RCC Fast, due to the relatively short pot life and nature of the applications degassing is not normally required or practical.

The degassing chamber should be large enough to accommodate the mixing vessel and the vacuum pump should ideally be able to create sufficient vacuum in the chamber to start degassing within one minute. Once the violent bubbling ceases degassing is complete for most applications, however for entirely bubble-free castings it is recommended that the product be mixed again and the degassing repeated to remove as much air as possible.

Please note that increasing the quantity of mix or working at higher ambient temperatures (e.g. in the summer) can reduce the pot life of the material. Where possible trials should be carried out to establish these parameters.

Pouring

Care during pouring is essential to avoid entrapped air. Pour the material slowly allowing it to flow gently over the mould surface and to fill cavities and channels from the bottom up.

Take care not to scrape the sides of the mixing vessel to remove the last of the product. This very frequently results in streaks of under-mixed product in the finished casting, which can be clearly seen. A good practice is to transfer the mixed product into a second container, mix again and degas before pouring.

Post cure

Clear Cast Fast will usually cure satisfactorily at ambient temperatures. Whilst the material can be de-moulded with care after about 1 hour, full strength and hardness will develop after 24 hours.

Clear Cast Slow can benefit from a post cure, depending on the section cast, which increases the hardness and heat distortion temperature of the cured products. This is particularly important if the casting is to be polished. Posturing the materials for 4-6 hours at 60-80°C will usually be adequate, and is best carried out in the mould to avoid distortion.

| | | | | | | |
|----------------|---|--------|---|-------------|---|----------|
| tooling resins | . | blocks | . | ancillaries | . | silicone |
|----------------|---|--------|---|-------------|---|----------|

With very thick castings or large masses some shrinkage is to be expected in corners, especially during a post cure. This can be alleviated by allowing the product to gel and the exotherm subside before pouring more resin into the corners and then post curing in the oven.

Chemical Handling

The relevant Safety Data Sheets should be read carefully before using this material.

Good housekeeping is important with this material as with all chemicals. Spillages should be wiped up immediately and containers wiped clean after use. Isocyanate spillages can be especially hazardous and the Safety Data Sheet should be consulted for the correct cleaning up procedure.

Storing

Both components will absorb moisture, which will detract from obtaining satisfactory product. Exposure to atmosphere should therefore be minimised and containers sealed as soon as possible after use. Ideally part-used containers should be purged with dry nitrogen before resealing.

The components should be stored in their original containers in a dry place at 5-25°C.

Both components have a minimum shelf life of 12 months from the date of manufacture when stored correctly in unopened containers.

Safety Measure

Please follow the precaution instructions of the Government Safety Organisation of the chemical industry when working with this material. Please follow safety advice.

The Safety Data Sheets provide information on the health and safety aspects of these materials. Please contact **ebalta** Distribution Ltd if you do not have the necessary Safety Data Sheets.

The Clear Cast Part A components are not classified according to the requirements of the CHIP regulations. However care should be taken to avoid direct contact and gloves, goggles and impervious overalls should be worn.

The Clear Cast Part B isocyanates are classified as TOXIC by inhalation. In addition it may cause sensitisation by inhalation and skin contact and is classified as IRRITANT to eyes, respiratory system and skin. At room temperature the vapour hazard is low but significant and care should be taken not to allow vapours to accumulate. This is especially likely if the product is heated. Avoid direct contact with skin and eyes by means of gloves, goggles and impervious overalls.

| | | | | | | |
|-----------------------|---|---------------|---|--------------------|---|-----------------|
| tooling resins | . | blocks | . | ancillaries | . | silicone |
|-----------------------|---|---------------|---|--------------------|---|-----------------|

Waste Disposal

According to arrangement with local authorities cured material can be disposed as domestic or commercial waste. Non-cured products are waste which is subject to inspection and has to be disposed accordingly. In case of further questions please do not hesitate to contact our Department for Product Safety.

The instructions and recommendations are given in good faith and are based on long experience and careful tests. Since the conditions of use are beyond our control, and due to versatility of applications and working methods, we can't give any guarantee. All information are non-binding and are no guarantee for special characteristics or properties of the product. Despite information given from **ebalta** the customer has to make his own tests regarding applications and processing. If any special warranty is requested, written agreement on this subject is essential.

| | | | | | | |
|-----------------------|---|---------------|---|--------------------|---|-----------------|
| tooling resins | . | blocks | . | ancillaries | . | silicone |
|-----------------------|---|---------------|---|--------------------|---|-----------------|
