

## Molding method with CYTOP solution cast

### Precautions for handling

Please be sure to read MSDS before using this product to ensure safe handling.

### 1 For cast mold

Prepare a mold of the specified size using Pyrex glass.  
It is desirable that the thickness of the mold is 3 mm or more.  
(Otherwise, cracking may occur due to the polymer shrinking when cooling.)  
Clean the mold before use according to the application.

### 2 Pouring solution

Use CTX-809SP2 (release type) solution.  
If another grade is used, it will adhere to the mold. The molded CYTOP resin cannot be taken off.  
After calculating solid concentration and mold size, pour the specified amount of solution into the mold.

(Example) When a sample of 50 mm x 50 mm x 2 mm is prepared  
Mold size: 5 cmD x 5 cmW x 10 cmH (It is needed to measure the mold weight.)  
CYTOP resin weight after molding: 5cm x 5 cm x 0.2 cm x 2.0g/cm<sup>3</sup> = 10 g  
CYTOP solution weight which is required: 10g / 0.09 = 112 g  
\* Polymer density: 2.0 g/cm<sup>3</sup> This is calculated assuming solution concentration is 9%.  
\* Solution density : 1.9g/cm<sup>3</sup>

### 3 Cast

Heat the solution poured into the cast mold in a circulating hot air oven with ventilation that achieves a temperature of 300°C or more.  
Remove the solvent. (Note: It is recommended to use an oven with a device to prevent excessive temperatures.  
At the exhaust system, install a cooling trap system that can collect the removed solvent.  
Example of temperature profile is as follows: (Processing time vary according to the amount.)

- (1) 80°C x 24 hours + 120°C x 12 hours: Remove air dissolved in the solution.
- (2) 180°C x 24 hours: The solvent is extracted by evaporating it.
- (3) 250°C x 24 hours: Remove bubbles by annealing. Measure total weight (mold + CYTOP resin) from time to time.  
The process is completed when there is no change in weight.  
(Usually, a small amount of solvent remains in the resin. So, the weight after casting is slightly greater than that of the CYTOP resin, as calculated in “2 Pouring solution.”)  
If it is difficult to deform, raise the temperature of the oven gradually up to 300°C.
- (4) Spend 24 hours cooling to room temperature: Take the bulk from the mold.  
\* It is difficult to deform on the process of heating by the electric hot plate.

### 4 Removing distortion

The bulk taken out from the mold has internal distortions due to shrinkage when cooling.  
After taking the bulk out of the mold, heat anneal at 110°C for 1 hour and then at 90°C for 24 hours to reduce distortion caused by shrinking.