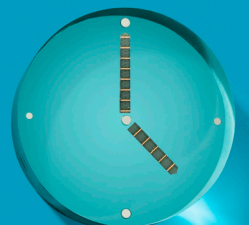


ProntoFix Mounting &
Trouble Shooting Guide

ProntoFix

The wait
is over



Now you don't have to compromise between speed and quality. ProntoFix gives you full transparency, low shrinkage and same-day specimen preparation. It's fast-curing, so you can have specimens ready the same day.

Faster and better performing than traditional epoxies, ProntoFix is now the go-to fast mounting resin for the most delicate jobs.

On the following pages you'll find all the information you need to get optimal results working with ProntoFix.

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Guide for ProntoFix

The ProntoFix system consists of a resin and a hardener as well as an accelerator. Under certain circumstances, we recommend to add the accelerator to secure the mount cures. This is based on the mounting cup size and the temperature of the surroundings in which the mount is cured.

| | | DIAMETER OF CUP (mm) (") | | |
|------------------------------|--------------------|--------------------------|--------------------|--------------------|
| | | Ø25 01.00 | Ø30 01.25 | Ø40 01.50 |
| TEMPERATURE IN LAB (°C) (°F) | <23 <73.4 | Accelerated system | Accelerated system | Accelerated system |
| | 23-27 73.4-80.6 | Accelerated system | Accelerated system | Standard system |
| | >27 >80.6 | Accelerated system | Standard system | Standard system |

RECOMMENDATIONS

- Accelerated system
- Standard system
- Curing not possible in less than 4 hours

Short mixing guide

Mixing ratio:

20 parts resin / 5.3 parts hardener by weight.

Mixing ratio with accelerator:

20 parts resin / 4.2 parts hardener / 1.1 parts accelerator by weight. The hardener and accelerator can be premixed in advance.

Operation:

Mix the correct amount of hardener into the correct amount of resin.

Stir the mixture well for about 1 minute without introducing too many air bubbles.

Select a suitable mounting cup and place the clean, dry specimen in the centre of it. Pour the ProntoFix carefully over the specimen.

Cover with a mixing cup, or other type of cover, and leave the cup to cure.

Mounting cup:

FixiForm

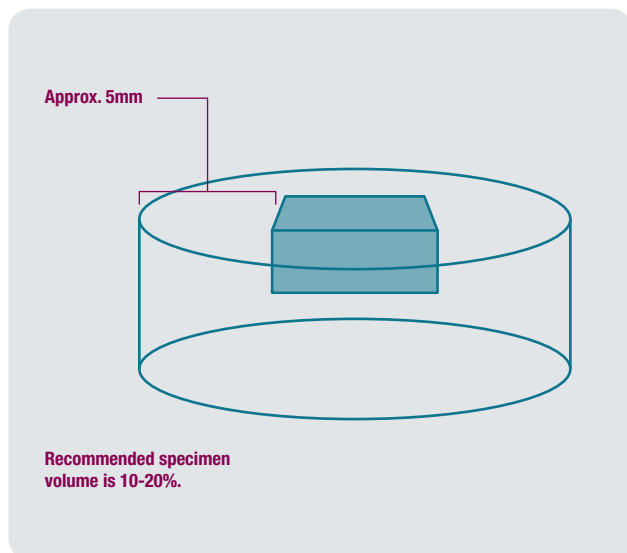


Print and pin!

Why not pin this page on the wall in your lab

How to mount

Clean the specimen. It must be cleaned before mounting to improve the adhesion of the mounting medium to the specimen. We recommend using alcohol or acetone. You might need to clean it in an ultrasonic bath. Remember to dry the specimen well. Handle your clean specimens with either gloves or tweezers.



Optimal specimen/ProntoFix volume ratio

The balance between specimen size and the volume of ProntoFix is essential to achieving a perfect mounting result. The combination of a small specimen mounted in a 40mm diameter mounting cup will generate excessive heat because of the chemical reaction. This might damage the specimen and will in some cases create air bubbles in the mount. We recommend choosing a mounting cup with distance between the sample and cup wall of about 5mm / 0.2". Optimal Specimen/ProntoFix volume ratio is 10-20%.

Fixing the specimen

Fixing clips (metal or plastic) ensure that thin plates, foils and wires remain upright. Double adhesive foil can be used to keep irregularly shaped specimens upright.

Specimens too small to be fixed by a clip such as some electronic components can be held in a vertical position while they are embedded by glueing them to the bottom of the mounting cup with a drop of fast-drying glue.



Stirring and Pouring

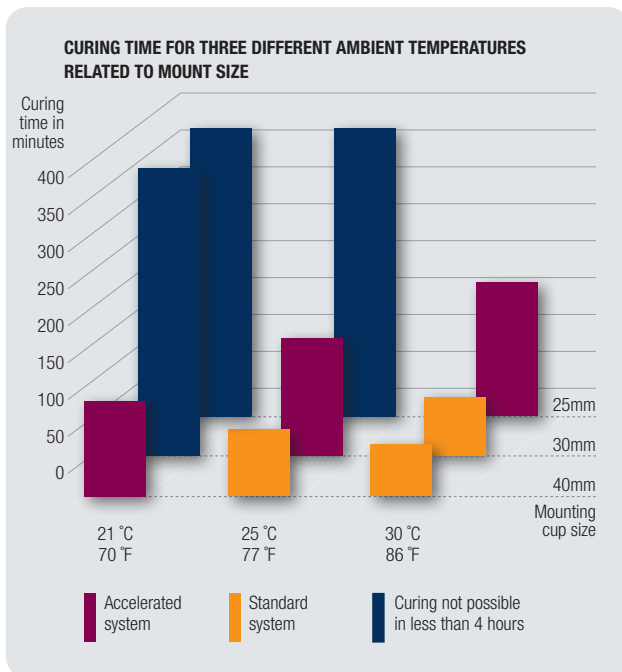
It is recommended to measure out hardener, accelerator and resin by weight. Weigh out hardener and accelerator before mixing with the resin. If accelerator is needed the hardener and accelerator can be premixed in advance. Do not mix more than 160ml at a time. This is due to the risk of bubble formation when a large amount of ProntoFix is mixed.

Mix the correct amount of hardener into the correct amount of resin and stir well the mixture for about 1 minute without introducing too many air bubbles. Pour carefully the mixture over the specimen. Fill the mounting cup until 5mm from the top. Due to the immediate reaction between resin and hardener it is important to pour the mixture immediately after mixing.

Curing

ProntoFix is a room temperature curing system. Curing time will be around 90 minutes for a 30mm mount, 10-20% specimen/volume ratio and in 25°C. The curing time will decrease as the mounting cup diameter increases and vice versa. The room temperature is an essential parameter for the ProntoFix curing time.

Due to the room temperature/cup size sensitivity the ProntoFix system includes an accelerator which we recommend under certain circumstances such as having too little ProntoFix in relation to the specimen volume, or a room temperature which is too low. Even though the system used with the accelerator will deliver a shorter curing time we do not recommend using the accelerated system in all cases because excessive heat build up can cause shrinkage and/or formation of bubbles in the cured matrix.



The above chart shows the relation between ambient temperature and curing time for 25, 30 and 40mm mounts.

We recommend covering your mounts during the curing process to optimise curing speed. You can cover the mounts with a mixing cup or any other type of cover. Cover each mount individually.

Evaluation

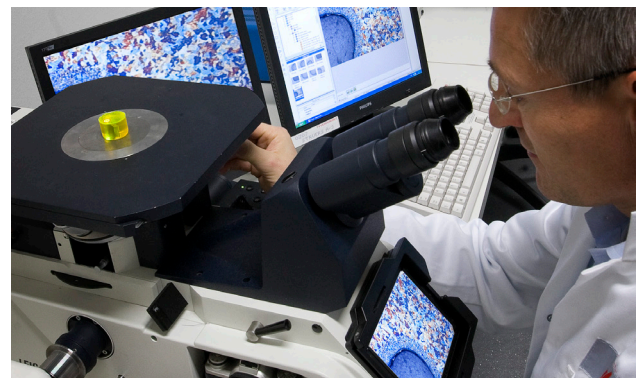
To evaluate if the mounting is sufficiently cured, press a wooden stick against the mount to check if it is hard (does not feel rubbery, no marks will be visible). Please note: the surface will be dry before curing has finished.

Please see SDS for further details.
<https://www.struers.com/Library#sds>

Vacuum Impregnation

Porous materials, such as ceramics or spray coatings, require vacuum impregnation. Vacuum is established in a CitoVac, to about 0.1-0.15 bar. All pores connected to the surface are filled with resin due to pressure equalization as ProntoFix enters the chamber. Consequently, the resin supports these fragile materials. Preparation artifacts such as pull-outs, cracks or unopened porosity can be minimized.

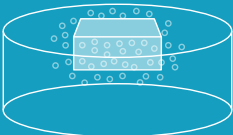
ProntoFix is suitable for vacuum impregnation due to its good wetting properties and low viscosity. A fluorescent dye, EpoDye, can be mixed with ProntoFix to make it easy to identify filled pores in fluorescent light.





Position the specimen in the middle of the mounting cup and place it in the vacuum chamber. Close the lid and evacuate the chamber. Give the process a few minutes to make sure that no air is left in small pores and cracks. Open the valve and the ProntoFix will be sucked into the chamber. When the specimen is completely covered by ProntoFix, close the valve and turn off the vacuum pump. Atmospheric pressure will press the ProntoFix into all the pores and cracks.


TROUBLE SHOOTING – COLD MOUNTING, EPOXIES

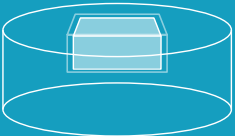
This trouble shooting is focused on ProntoFix but is duplicable on most epoxy products. On the following pages you can find short descriptions of some of things that can go wrong during mounting and curing. You'll also see what caused the problem and what you can do to fix it – and avoid it happening again.

| Problem | Cause | Solution |
|---|--|--|
| <p>Air bubbles along the sides of the specimen</p>  <p>The system creates to many bubbles – generation of excessive heat</p> | Lab temperature > 23°C | <ul style="list-style-type: none"> Uncover the mount during curing Use Struers DryBox to increase airflow Use a smaller amount of mounting material Cool down mounting material during mixing If Accelerator is used try to use standard system |
| | Specimen/ProntoFix volume ratio < 20% < 10% for metallic specimen (Too small specimen) | <ul style="list-style-type: none"> Uncover the mounting cup Use Struers DryBox to increase airflow Pour less ProntoFix in the mounting cup If Accelerator is used try to use standard system |
| | The mount is less than 5mm from the top of the mounting cup | <ul style="list-style-type: none"> Uncover during curing Use Struers DryBox to increase airflow |
| | Diameter 50mm | <ul style="list-style-type: none"> Fill up only half of the mounting cup If you need a 20mm tall mount, cure in two steps Uncover while curing Use a smaller mounting cup Use Struers DryBox to increase airflow If Accelerator is used try to use standard system |
| | Insufficient degreasing of specimen | <ul style="list-style-type: none"> Clean and degrease samples prior to mounting |
| | Too active stirring of mixture | <ul style="list-style-type: none"> Stir without introducing air into the mixture |

| Problem | Cause | Solution |
|--|--|--|
| <p>High shrinkage</p>  | Too high temperature during curing | <ul style="list-style-type: none"> Use Struers DryBox to increase airflow |
| | Insufficient degreasing of specimen | <ul style="list-style-type: none"> Clean and degrease samples prior to mounting |
| | Insufficient mixing of resin and hardener | <ul style="list-style-type: none"> Stir mixture thoroughly |
| | Too large volume of mixture or too long time after stirring before pouring | <ul style="list-style-type: none"> Mix smaller volumes and pour over specimens immediately after stirring |

| Problem | Cause | Solution |
|--|--|--|
| Sticky or rubbery surface  The system cures too slowly | Lab temperature < 23°C | <ul style="list-style-type: none"> · Fill up the mounting cup sufficiently · Use a bigger mounting cup · Use the Struers DryBox to increase temperature · If the standard hardener is used, try to use the Accelerator to decrease curing time |
| | Specimen/ProntoFix volume ratio > 20% > 10% for metallic specimen (Too big specimen) | <ul style="list-style-type: none"> · Use a bigger mounting cup · Reduce the size of the specimen · Use the Struers DryBox to increase temperature · If the standard hardener is used, try to use the Accelerator to decrease curing time |
| | The mount is more than 5mm from the top of the mounting cup (Too low mount) | <ul style="list-style-type: none"> · Use the Struers DryBox to increase temperature · If the standard hardener is used, try to use the Accelerator to decrease curing time |
| | Mounting cup diameter 25mm | <ul style="list-style-type: none"> · Use a Drybox to increase temperature · Use a bigger mounting cup · If the standard hardener is used, try to use the Accelerator to decrease curing time |

| Problem | Cause | Solution |
|---|--|---|
| Indraft/suction at the bottom of the specimen  | Too high temperature during curing | <ul style="list-style-type: none"> · Use Struers DryBox to increase airflow |
| | Specimen/ProntoFix volume ratio < 20% < 10% for metallic specimen (Too small specimen) | <ul style="list-style-type: none"> · Use adequate mounting cup or mount in layers of around 10mm per layer. Wait until the first layer is cured and then cast the next layer |

| Problem | Cause | Solution |
|--|--|--|
| Gap between ProntoFix and specimen  | Too high temperature during curing | <ul style="list-style-type: none"> · Use Struers DryBox to increase airflow |
| | Insufficient degreasing of specimen | <ul style="list-style-type: none"> · Clean and degrease samples prior to mounting |
| | Specimen/ProntoFix volume ratio < 20% < 10% for metallic specimen (Too small specimen) | <ul style="list-style-type: none"> · Use Struers DryBox to increase airflow |
| | Too much hardener in relation to resin | <ul style="list-style-type: none"> · Mix resin and hardener in the correct ratio |

Order today and get a **FREE** System Guide

Our System Guide will ensure you make the perfect mix for the lab conditions and specimen size, every time.

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