

Technical Data Sheet

Technovit H7100 Soft Tissues

Catalog #14653

Glycol Methacrylate Embedding For Soft Tissues

Embedding in plastic provides many advantages to the histotechnologist. Thinner sections can be made providing improved detail. Better support is given to cellular components, offering improved morphology. Short, straightforward protocols are available giving minimum processing times. Improved chemistry provided by kits gives uniform results and a wider range of application.

While this protocol will help get you started with embedding your soft biological samples in the Technovit GMA kits sold by Electron Microscopy Sciences, it follows the general guidelines for embedding in any source of GMA.

Procedure

Fixation of the biological samples can be done in any way appropriate for the work you are doing. Immersion or perfusion with 4% neutralized formaldehyde, prepared from paraformaldehyde according to Karnovsky, is usually preferred. Try to keep the sample size small using 10mm x10mm 2xmm as a maximum.

Dehydration for GMA embedments does not have to be complete because of GMA's miscibility in water. Use a schedule of increasing alcohol concentration at room temperature as follows:

- 70% ethanol for two hours
- 96% ethanol for two hours
- 96% ethanol for two hours
- Absolute ethanol for one hour

A short defatting step can help with infiltration. If desired, submerge the sample in acetone for 10 minutes.

Make your infiltrating solution from:

- 100ml of Technovit 7100 resin, i.e. 2-hydroxyethyl methacrylate (GMA)
- 1gm of Hardener I (benzoyl peroxide)

Mix using a magnetic stirrer until the benzoyl peroxide is complete dissolved. Store at 4°C in a dark bottle for up to two months.

Infiltrate in a 50/50 mixture of 100% ethanol and infiltration solution for two hours. Leave the sample in 100% infiltration solution overnight. Infiltration with mild agitation and/or vacuum will be more complete and larger samples should have more infiltration steps over a longer period of time.

Make up your embedding solution from:

- 15 parts of infiltrating solution
- 1 part of Hardener II

Mix for one minute using a magnetic stirrer. Use the solution within 10 minutes, before polymerization occurs.