

Technical Data Sheet

Technovit H7100 / H8100 Sectioning And Mounting

#14653 - 14654

Sectioning

Sectioning is best done with a rotary or sledge microtome such as the JB-4 Microtome. The features to look for are retraction of the specimen on the return stroke and motorized motion of the sample relative to the knife edge. Retraction is needed to keep the hard sample from brushing against the knife edge on the return stroke, damaging the edge and block face. Motorized sample movement is desirable to get more reproducible cutting speed and force.

The best sections are obtained on these microtome with a glass knife. Glass knife strips are available from Electron Microscopy Sciences. Dry block faces are used; in fact, moisture and humidity will soften GMA blocks sufficiently to make sectioning impossible. If the block is too soft to section dry the block in a warm oven or move to a less humid work environment.

Sections are collected from the knife edge using tweezers and stretched by floating on a water bath. Two factors are important when preparing the water bath: cleanliness and temperature. Any residue of soap or oil will decrease the surface tension of the water dramatically reducing its stretching ability and/or causing the section to sink. Increasing temperature also reduces the stretching ability of the bath so that at 20°C stretching of 10-13% is possible while at 60°C stretching of 7-9% is possible. Section stretching allows recovery of almost all the compression caused during sectioning. Properly stretched, much less than 1% of the compression in vertical dimension remains in the sections.

Most procedures call for mounting your sections on slides before staining. The exception may be when staining sawn sections since these retain enough strength to be held in tweezers and hand-dipped in the various staining solution (followed directly by coverslipping to slides). Mounting thinner sections to slides before staining also helps to prevent folds from developing in the sections. If you are using slides precoated with silane, skip the protocol for coating your own.

Preparing Silanized Slides

Procedure

1. Dip slides in 2% silane/acetone solution for one minute.
2. Dip slides in 100% acetone for one minute.
3. Dip slides in double distilled water for one minute.
4. Repeat step 3 with agitation.
5. Air dry.
6. Apply sections on a drop of water on the slide.
7. Dry on 60°C hot plate for two to five minutes.
8. Air dry at room temperature overnight.

Dip your coated slide into the waterbath under the section and lift the section off the water surface. Dry the slides for about 16 minutes on a 60°C slide warmer.