

Technical Data Sheets

Epoxy Tissue Stain (E.T.S.)

#14950

Biological specimens embedded in epoxy need to be examined by light microscopy, either for orientation prior to further ultra-thin sectioning, or for light microscopy studies.

Many histological stains fail to react with the specimen in the epoxy media. Using our E.T.S., sections of tissue embedded in epoxy can be stained by a very simple method. This polychromatic staining solution can be used for staining sections of epoxy-embedded specimens prepared for electron microscopy examination, e.g.

- glutaraldehyde and osmium fixation.

The most common application is for sections (0.5 - 1.5µm thick) cut in the ultramicrotome with either glass or diamond knives. The sections are placed on a glass microscope slide and dried on a hot plate. A drop of E.T.S. is added to cover the section on the warmed slide, and the slide is put back on the hot plate until a silver rim is formed. Any excess stain is removed with distilled water from a squeeze bottle, the slide is allowed to dry, and the sections are covered with a cover-slip.

The intensity of the stain can be controlled by altering the time that the sections remain on the hot plate. For darker results, allow the stain to dry completely. If sections are over-stained, some of the stain can be removed by washing the section with absolute alcohol.

Other methods can be used prior to embedding:

En-block, where the specimen is fixed in the usual manner with glutaraldehyde and osmium, rinsed in buffer, and stained for 15 minutes with E.T.S. in a capped vial at 65°C. The specimen is allowed to return to room temperature (10-15 minutes), then dehydrated in ethanol and embedded in epoxy resin.

After sectioning off a preliminary block, a secondary staining yields a superior polychromatic coloration for light microscopy. Also, there are no adverse results or artifacts or ultra-structural changes caused by the stain at the E.M. level. The only trace of E.T.S. staining is a slight, bluish coloration of thin sections.

A better reaction of this polychromatic stain can be obtained when tissue is fixed with glutaraldehyde alone and not post-fixed with osmium.

Reference:

Spurlock, B. O. et al, American Journal of Clinical Pathology, Vol 46 #2, 252 (1966)