

QUETOL 651

Use Instructions



QUETOL 651 is a water miscible epoxy resin with a low viscosity affording easy embedding, infiltration, sectioning and staining. Characterized by low electron scattering, it can be used for both light and electron microscopy.

Semi-thin sections approximately 0.2µm thick embedded in QUETOL 651 are suitable for examination with an ordinary electron microscope operating at 100kV.

This method uses QUETOL 651 and the epoxy resin, nonenyl succinic anhydride (NSA) and nadic methyl anhydride (NMA) as hardener and DMP-30 as accelerator. QUETOL 651 is an ethylene glycol diglycidyl ether, an epoxy resin of low viscosity. It is a light colored epoxy resin with a viscosity of 15 cps at 25°C. It is readily miscible with water, alcohol, acetone, n-butyl glycidyl ether, etc. It acts as a dehydrating agent, and combines chemically in any cured epoxy resin formulation.

The following mixture, is recommended for - this method:

QUETOL 651 35 ml

NSA 54 ml

NMA 11 ml

DMP-30 1.5-2.0 ml

This mixture has a low viscosity, and is therefore easy to handle and penetrates readily and completely into the specimen. It sets in about 24 hours at 60°C and yields a light yellow block which is suitable for sectioning at 20°C. This final hardness of the blocks can be adjusted by altering the ratio of QUETOL 651 and NSA.

Tissue sample sizes are approximately 2x2x1 mm, since a section of an area of approximately 2x2µm is suitable for mounting on a grid 3mm in diameter. The pieces are fixed in buffered aldehyde solution, post fixed in buffered osmium tetroxide solution, washed in a nonphosphate buffer, and should then be stained en block with aqueous uranyl acetate. After dehydration in graded alcohol or QUETOL 651, the following infiltration procedure is appropriate. N-butyl glycidyl ether (n-BGE) is employed as an auxiliary to infiltration. All

steps are carried out on a shaker at room temperature.

Embedding:

Dehydrating agent/n-BGE) (1:1) 30 minutes

n-BGE 30 minutes

n-BGE/QUETOL 651 mixture (1:1) 1-2 hr.

QUETOL 651 mixture 2-3 hr.

Embed in gelatin (or polyethylene) capsules and cure in an at 60°C for about 24 hours.

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