

DER 332-732 Embedding Kit

#E14000

Introduction

This kit combines two epoxy resins, DER 332, a very pure and uniform epoxy having a low viscosity, and DER 732, a polyglycol diepoxide which imparts softness and flexibility to the polymers of conventional epoxides, but does not cause shrinkage or serious loss of strength. Together with their curing agents, this kit produces a standard amber-colored block which can be trimmed and sectioned easily.

Recommended Procedure

Fixation:

Tissues can be fixed in a wide range of fixatives. One of the more commonly used fixatives is an aldehyde (i.e.: glutaraldehyde) followed by osmium tetroxide.

Dehydration:

There are many different dehydration schedules that can be followed. A typical one is as follows:

70% Ethanol for 10 minutes

100% Ethanol for 10 minutes

100% Ethanol for 15 minutes

100% Propylene Oxide for 15 minutes

100% Propylene Oxide for 15 minutes

****NOTE:** Longer times may be required for some samples.

Mixing Instructions:

Components	Softer	Harder	Tougher, Soft	A/E Ratio*
DER 332	7ml	7ml	6ml	7ml
DER 732	3ml	2ml	3ml	3.2ml
DDSA	5ml	5ml	10ml	8ml
DMP 30	0.3ml	0.28ml	0.38ml	0.3ml

(FOR LARGER BATCHES INCREASE EACH COMPONENT PROPORTIONALLY)

Slight variations of the accelerator (DMP-30) will drastically affect the color and brittleness of the block.

Prior to measuring and mixing, the resin and the anhydride should be warmed (60°C) to reduce their viscosity. Thorough mixing is imperative to be able to achieve uniform blocks.

Although the mixture can be stored for up to 6 months at 4°C it is highly recommended that freshly prepared embedding medium always be used. If you choose to store the mixture you should warm it thoroughly prior to adding the accelerator.

Infiltration:

It is recommended that for all of the infiltration steps a specimen rotator be used.

- Drain the tissue of most of the propylene oxide, leaving a little so the tissue does not dry out.
- Replace the solvent with a 1:1 solution of propylene oxide:embedding medium and allow it to stand for at least 1 hour at room temperature.
- Remove the mixture, replace it with 100% embedding medium and leave for 6-12 hours at room temperature.

Embedding:

This may be done in embedding capsules #E70020 or a flat embedding mold #E70900).

Transfer each sample to a dry capsule or mold and fill the mold with embedding medium. Curing of the medium may be carried out in an oven at 37°C, 45°C, and 60°C for 24 hours at each temperature.

Blocks can be trimmed and sectioned after the blocks return to room temperature.

*This formula was suggested by Bluemink(1970) in accordance with the recommendations of Coulter(1967) concerning anhydride/epoxy ratios.

References

Lockwood, W.R.(1964), Anatomical Record, 150, 129.
Bluemink, J.G.(1970), J. Ultrastruct. Res. 32, 142.