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LX-112 / Araldite 502 Embedding Kit

Catalog Number 21213

This embedding kit is based on the work of Mollenhauer who, in 1964, published his development of an embedding mixture containing Epon 812 (LX-112 is a generic replacement) and Araldite 502. Although he developed this mixture for preserving the cell wall when embedding plant tissue, it was subsequently proven to be very successful with animal tissue.

Fixation

Use one of the wide range of fixatives, typically glutaraldehyde followed by osmium tetroxide.

Dehydration

There is a multitude of dehydration schedules available. Following is a typical one:

1. 70% ethanol for 10 minutes
2. 100% ethanol for 10 minutes
3. 100% ethanol for 15 minutes
4. 100% propylene oxide for 15 minutes
5. 100% propylene oxide for 15 minutes

NOTE: You may need to adjust dehydration times depending on the size of your sample.

Mixing Instructions

LX-112	27.5g
Araldite 502	17.0g
DDSA	55.0g
DMP-30	1.45-1.8g

For those who wish to use BDMA, use 2.15 to 2.51g

Notes

- Slight variation of the accelerator will drastically affect the color and brittleness of the block.
- For Larger batches increase each component proportionally.
- Prior to measuring and mixing, the resins and anhydride may be warmed to no higher than 60°C to reduce the viscosity. Thorough mixing is imperative to be able to achieve uniform blocks.

The combination of different embedding resins is popular because these kits blend the best qualities of each individual resin into one.

In 1964, Mollenhauer developed an Araldite-Epon (LX-112) mixture for embedding plant tissue, with particular interest in preserving the plant cell wall. It has also been shown to be successful with animal tissue. Sectioning with this mixture of resins has been proven to be easier than with each individual resin and the thermal stability of Araldite and the image contrast of LX-112 have made this a very successful blend.

Recommended Procedure:

Fixation:

Tissue can be fixed in a wide range of fixatives. One of the most commonly used fixatives is an aldehyde (e.g. glutaraldehyde) followed by osmium tetroxide.

Dehydration:

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

1. 70% ethanol for 10 minutes
2. 100% ethanol for 10 minutes
3. 100% ethanol for 15 minutes
4. 100% propylene oxide for 15 minutes
5. 100% propylene oxide for 15 minutes
   Note: Longer times may be required for some large samples.

Mixing Instruction:

- LX-112 27.5g (or 25ml)
- Araldite 502 17.0g (or 15ml)
- DDSA 55.0g (or 55ml)
- DMP-30* 1.45-1.8g (or 1.5-1.9ml)

*For better penetration and stability, in place of DMP-30 we recommend using BDMA. The quantity of BDMA is double the quantity of DMP-30 (2.15-2.51g or 2.4-2.8ml).

Slight variation of the accelerator will drastically affect the color and brittleness of the block.

For larger batches, increase each compound proportionally.

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 4-8°C in a tightly closed container, we highly recommend that freshly prepared embedding medium is the best option. If you choose to store the mixture, you should warm it thoroughly prior to adding the accelerator.

Infiltration:
It is recommended that for all infiltration steps, a specimen rotator should 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 slowly rotate for at least one hour at room temperature.
- Remove the mixture, replace it with 100% embedding medium and slowly rotate for 6-12 hours at room temperature.
- Replace the old mixture with fresh embedding medium and allow it to slowly rotate for at least 2 hours.

Embedding:

Embedding may be done in BEEM capsules (Catalog Number 21602) or in flat embedding molds (Catalog Number 21775). Transfer each sample to a dry capsule or mold and fill the mold with embedding medium. Cure the medium in an oven at 60°C for 12 hours or until it is hard. Better sectioning properties of some samples may be achieved if a time of 24 hours in the oven is used.

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

Reference:

Mollenhauer, H.H. (1964), Stain Technology, **39:**11.