Ladd Research
3 Ewing Place
Essex Junction, VT 05452
Tel: (802) 658-4961
Email: sales@laddresearch.com
Web: www.laddresearch.com

Catalog Number 55140: Durcupan ACM Embedding Kit

Instructions for Use

These instructions were extracted from information supplied by Sigma/Fluka, St. Louis, MO

Mixtures of Durcupan ACM present a n interesting alternative to methacrylates for embedding sections for electron microscopy. Durcupan hardens uniformly, practically without shrinkage. All fixing agents normally used for electron microscopic work are also suitable for the Durcupan ACM embedding process.

The embedding process consists of 3 phases: dehydration of the tissue with acetone or ethanol, infiltration with the embedding agent and curing.
The following 2 solutions should be prepared immediately prior to embedding:

Solution 1
Durcupan ACM Resin - 10ml
DDSA - 10ml
Dibutyl phthalate - 0.1 to 0.2ml

Solution 2
Durcupan ACM Resin - 10ml
DDSA - 10ml
Dibutyl phthalate - 0.1 to 0.2ml
DMP 30 - 0.3 to 0.4ml

Dehydration

1. 30% acetone – 15 minutes
2. 50% acetone – 30 minutes
3. 70% acetone – 30 minutes
4. 90% acetone – 30 minutes
5. Anhydrous acetone – 30 minutes. (Ethanol may be used)
6. Anhydrous acetone – 30 minutes

Infiltration

7. **Three** parts anhydrous acetone (or ethanol) in **one** part Durcupan Solution 1. Room temperature. One hour.
8. **Two** parts anhydrous acetone (or ethanol) in **two** parts Durcupan Solution 1. Room temperature. One hour.
9. **One** part anhydrous acetone (or ethanol) in **three** parts Durcupan Solution 1. Room temperature. One hour. This period may be extended overnight if you wish.
10. Durcupan Solution 1. 50º C. 1-2 hours.

11. Durcupan Solution 1. 50º C. 1-2 hours.
12. Durcupan Solution 2. 50º C. 1-2 hours.

Embedding

13. Remove the tissue from step 12 and place it in a dry gelatin or BEEM capsule.
14. The capsule is then filled with Durcupan Solution 2. After closing the capsule, harden it in a drying oven at 50-80º C for at least 48 hours.

In this manner blocks of a pale golden color are obtained with a hardness similar to that of the methacrylates. The cutting properties are also superb.

NOTES

1. Durcupan Solutions 1 and 2 are preferably prepared at least 15 minutes before use and kept in a drying oven at 50º C.
2. Glassware used for measuring and mixing should be placed in acetone or absolute ethanol immediately after use and cleaned.
3. Durcupan mixtures are more soluble in acetone than in ethanol.
4. Addition of dibutyl phthalate reduces the brittleness of blocks and improves their cutting properties.
5. With materials containing minimal water, it is permissible to begin with step 2 (on the previous page).

CAUTION!!

Take great care when working with Durcupan ACM. Do not breathe the vapor and avoid skin contact, because this may cause skin irritation and allergic reactions. Splashes on the skin must be washed immediately with a 3% boric acid solution. Frequent washing of hands, arms and face with lukewarm soapy water is recommended.