

Hexamethyldisilazane

Procedure

Hexamethyldisilazane (HMDS) provides a rapid, inexpensive method for the preparation of soft insect tissues for Scanning Electron Microscopy (SEM). This procedure is used in place of critical point drying and takes only 5 minutes.^{1,2}

1. Use freshly cut insect tissues in 2 mm to 10 mm long by 2 mm thick.
2. Immerse tissues in physiological saline.
3. Immediately transfer to a solution containing 1% Glutaraldehyde in 0.1 M Cacodylate buffer, pH 7.
Allow tissues to sit in this fixative for 5 minutes.
4. Wash tissues for 5 minutes in distilled H₂O.
5. Dehydrate using a series of ethanol washes:
 - a. 70% Ethanol - 5 minutes.
 - b. 85% Ethanol - 5 minutes.
 - c. 95% Ethanol - 5 minutes.
 - d. 100% Ethanol - 5 minutes.
6. Immerse tissues in HMDS for 5 to 15 minutes, depending on their sizes. Then, air dry at room temperature.
Larger specimens are better dried in a desiccator under low vacuum.³
7. Mount tissues on stainless steel SEM stubs.
8. Coat immediately with gold in a sputter coater or store desiccated until coated.

Safety Precautions

CAUTION: HANDLE WITH CARE. May cause burns to eyes and skin. Avoid contact with eyes and skin. Avoid breathing vapors. Wear goggles, gloves and protective clothing. Use only with adequate ventilation. Wash thoroughly after handling. The long-term toxicity has not been determined. Avoid prolonged or repeated exposure.

FIRST AID: In case of contact, flush eyes or skin with plenty of water for at least 15 minutes. Call a physician immediately.

STORAGE: Store in a dry area at 15-27°C. Keep container tightly closed. Store away from heat, sparks and open flame. Should appear as a clear liquid.

Ordering Information:

Cat. #	Description	Size
00692	Hexamethyldisilazane (HMDS)	250g (326 ml)
00216	Glutaraldehyde, EM Grade, snap open vial, 8% aqueous	30 x 10ml amp
03880	Cacodylic acid, free acid	100g
01131	Cacodylic acid, sodium salt	100g 500g

See TDS #124 for complete list of glutaraldehyde products.

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References:

1. Nation, J.L., Stain Tech., 58 (6), 347-351 (1983).
2. Nation, J.L., Int. J. Insect Morphol. Embryol., 12 (4), 201-210 (1983).
3. Giammara, B., Proceed. EMSA, 45, 878 (1987).