Modified Hiraoka Grid Staining Kit

#E71560-00

The Staining Kit is made for heavy metal staining of biological samples on TEM-Grids and can contrast up to 20 grids at a time. This modified version of the original Hiraoka Staining Kit facilitates grid handling, saves time and reagents.

Includes: 6x Staining Tray (#E71560-10), Plate Holder (#E71560-20), Parafilm Well Holder (#E71560-30), 2x Staining Tray Space Insert (#E71560-31), 2x Grid Support Plate (#E71560-32)

Unique features

- Reduced risk of mechanical damage of sample and grid
- Controlled time and stain exposure of all TEM-Grids
- Alpha-numeric system for grid identification and location on Grid Support Plate
- Easy to clean – Parafilm inserts minimizes staining residuals in the chamber

The Staining Tray and insert are made from microwave resistant and autoclavable polypropylene (PP). Plate Holder and the Parafilm Well Holder are made from Polyoxymethylene (POM, Delrin).

NOTE: The plastics that are used in this kit are not resistant to alcohols and acids. The staining trays are specifically designed for aqueous solutions. Usage of alcohol-based solutions will cause substantial damage to the materials of both Parafilm® tray liners and trays.

Required volume of staining solutions:

- 1-10 grids: 2ml, using Staining tray space insert in tray well to decrease volume
- 11-20 grids: 5ml, full tray volume

Handling Instructions

1. Place Grid support plate into the Plate Holder, bend and clip into corners with slits facing upward
2. Load TEM grids into slits of Grid support plate with fine forceps at identified locations
3. Slowly unclip from the Plate Holder
Parafilm® lining of full tray well surface:

a) Place Parafilm® sheet over Staining Tray with lining sheet upward

b) Use Parafilm® Well Mold to press Parafilm® into Staining Tray surface and outer edges

c) Use Parafilm® Well Mold to crease edges Parafilm® around edges of tray.

d) Slowly peel away Parafilm® lining sheet from edge of tray to remove. After removal, use lining sheet to press edges of Parafilm® into edges of tray for adhesion into the tray well

Parafilm® lining of half of tray well surface (2ml)

a) Insert Staining Tray Spacer into Staining Tray and place Parafilm® sheet on top with lining sheet upward

b) Use the protruding end of Parafilm® Well Mold to press Parafilm® sheet into tray well surface and outer edges

c) Use Parafilm® Well Mold to crease edges Parafilm® around edges of tray

d) Slowly peel away Parafilm® lining sheet from edge of tray to remove. After removal, use lining sheet to press edges of Parafilm® into edges of tray for adhesion into the tray well

4. Fill Parafilm® lined trays with stain solutions and distilled water liquids. There should be a positive meniscus of liquid in each tray

5. Use laboratory established TEM grid staining procedure with a minimum of 4 distilled water rinses after each stain (e.g. uranyl acetate / UranyLess and lead stain)

6. Place the Grid Support Plate with the mounted grids facing down into the filled tray to totally submerge grids into the stain solutions and subsequent distilled water rinses at an angle to prevent air bubbles. There may be a residual amount of liquid spillage that should flow into the outer trough of each tray.

After staining run completion, dispose all used solutions and Parafilm® tray liners according to local, state, and federal regulations.

References

Hiraoka JI. A holder for mass treatment of grids, adapted especially to electron staining and autoradiography. Stain Technology 1972; 47:297–301.