

Cleaning/recycling of ITO slides

Equipment and Materials:

Equipment

Slide rack from Wheaton (30slides)



Tray for slide rack (30-Slide Stainless Steel Dish or any size tray that can place the slide rack in)



Oven at 85°C

Chemicals

Acetone, ethanol, MilliQ water; 20% Ethanolamine (20% by weight) made from Ethanolamine (Sigma/Aldrich, 411000-500ML) with MilliQ water; Saturated sodium carbonate solution (made from Sodium carbonate monohydrate from Sigma/Aldrich (230952-500G))

Procedure

1. New ITO slides from the vendor are placed in slide rack and immersed in a slide tray containing saturated sodium carbonate solution overnight.
2. Used ITO slides that are suitable for recycling (no scratches, no laser burn defect, etc.), are rinsed with ethanol/acetone to remove the matrix coating or any contamination and

then are placed in the slide rack and immersed in slide tray containing saturated sodium carbonate solution overnight. Then the tissues on the slides are removed gently with gloved hands under tap water rinsing.

3. ITO slides from step 1 (new slides) or step 2 (used slides) are rinsed with MilliQ water thoroughly, immersed in 20% ethanolamine solution and placed in 85°C oven for 2 hours.
4. ITO slides from step 3 are taken out of 85°C oven and rinsed with MilliQ water thoroughly and placed back in 85°C to dry.
5. Dried slides are cooled to room temperature and placed in slide boxes.

Expected outcome

1. Slides fresh from vendor can be used after the cleaning procedure.
2. Recycled used slides should be checked by looking through the slide over bench light at different angles, These slides can only be used when they are absolutely clean and no trace or defect on the surface.
3. The resistance of the slides measured at different dimensions should not be changed before/after the cleaning.

Reference: Delta technology application note:

<http://www.delta-technologies.com/downloads/applicationnotes.pdf>