Micro Cover Glass Squares

Josephine Mueller
Cleanroom Microscopist

ANALYSIS · EDUCATION · INSTRUMENTS · THE McCRONE GROUP

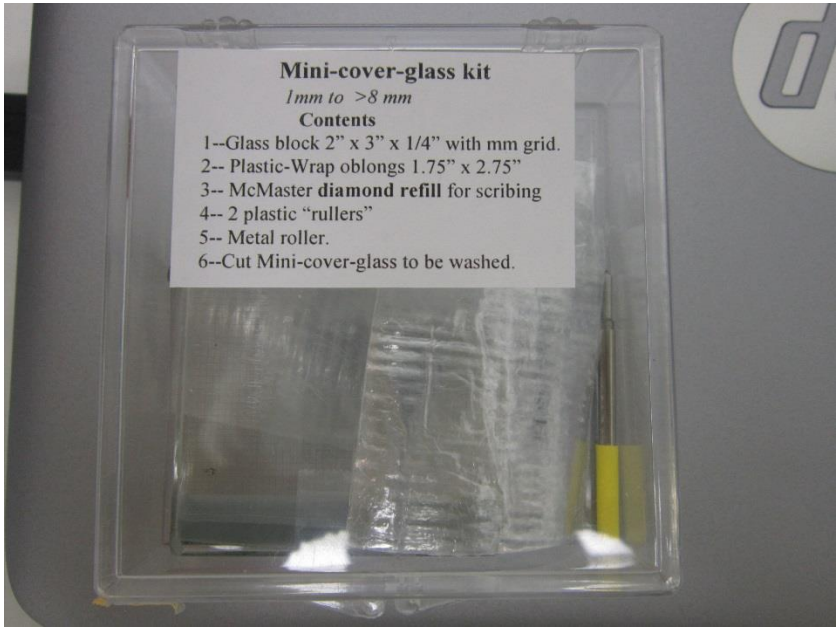
Micro Cover Glass Squares

Josephine Mueller
Cleanroom Microscopist

ANALYSIS · EDUCATION · INSTRUMENTS · THE McCRONE GROUP

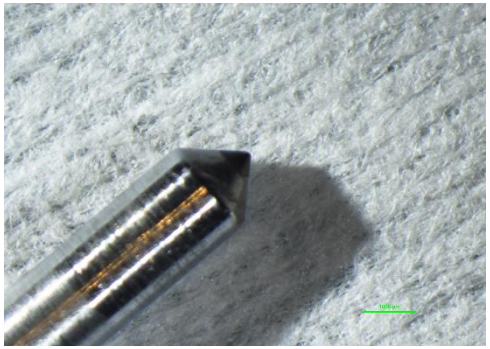
Overview

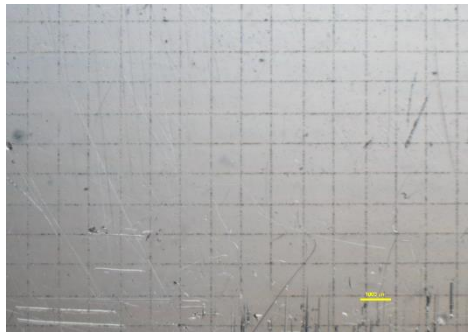
- Materials required
- Setting up your station
- How to make the size you desire
- Washing
- Large vs. Small
- Common Uses

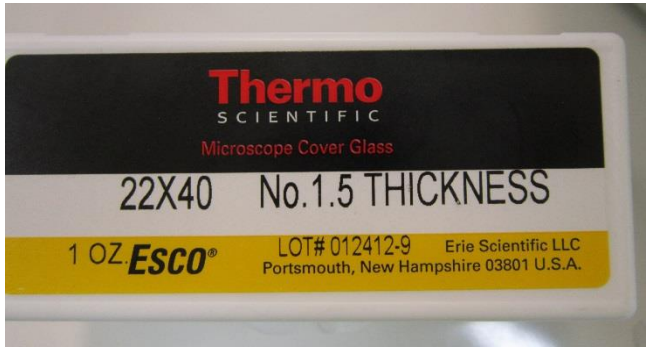


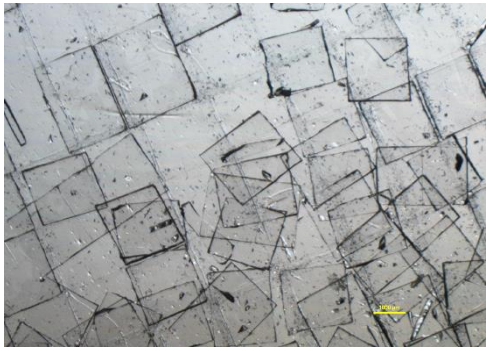
Materials Required

- Stereomicroscope
- Small Diamond Scribe
- Glass Block with Mylar® Film Grid
- Plastic Rulers
- Large Cover Glass
- Plastic Wrap
- Ball point pen or rod
- USA Standard Testing Sieve No. 40 or 60
  - (for the cleaning process)



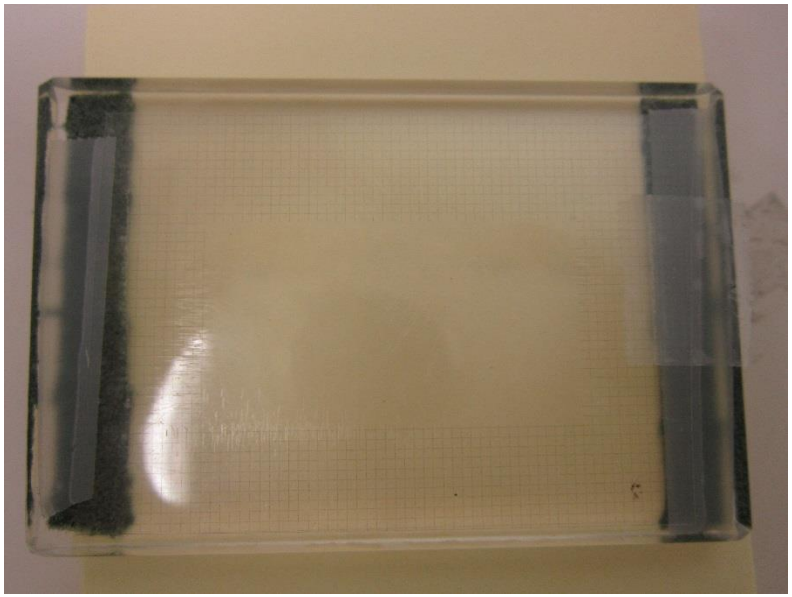






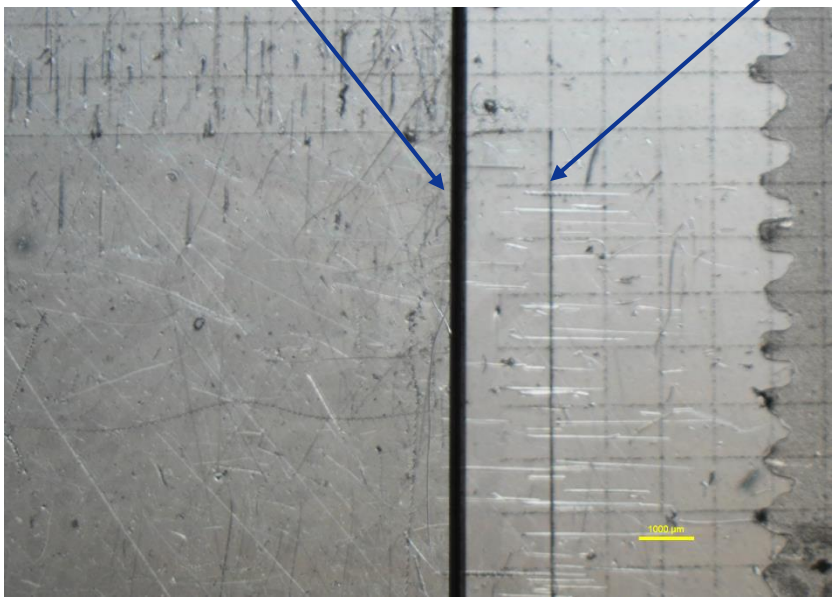
Set Up Your Microscope Area

- Attach the Mylar® film to the top of the glass block (2” x 3” x ¼”) using double sided tape
- Place a single piece of plastic wrap on the block
- Place a large cover glass (22 x 40 mm) in the center secured with plastic ruler



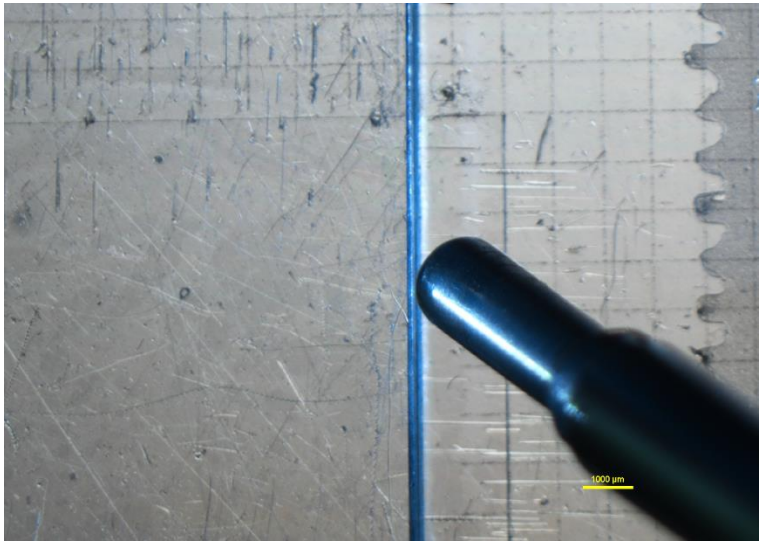
Plastic ruler to hold slide in place and create a straight line to scribe

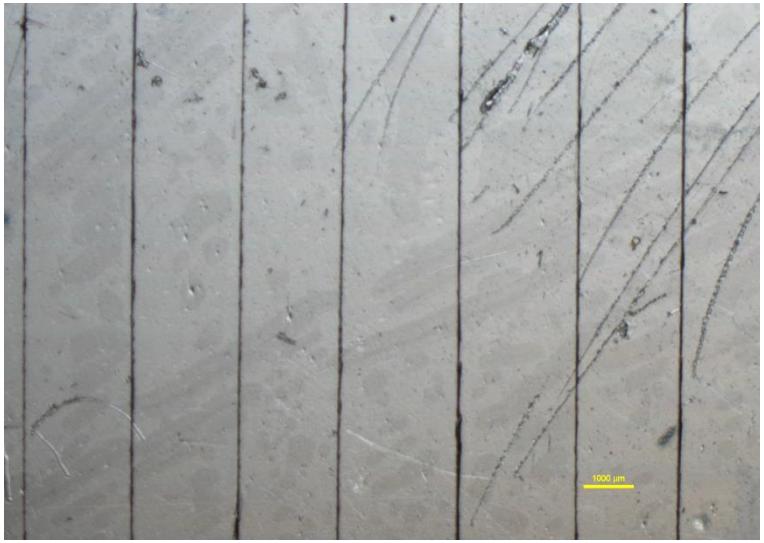
Large slide in open area of grid



Scoring the Size you Desire

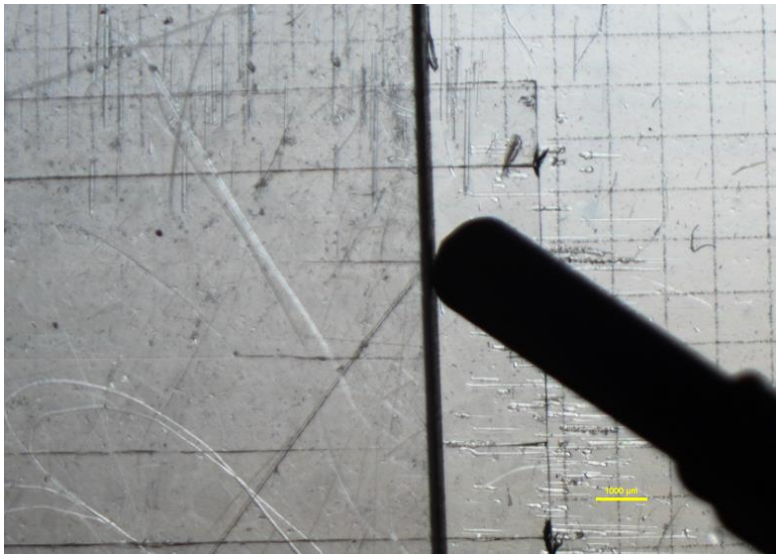
- Place appropriately sized ruler on cover glass for straight scribe line
- Use the grid to determine size you desire
- Try to use a small angle with the scribe so the cuts are clean

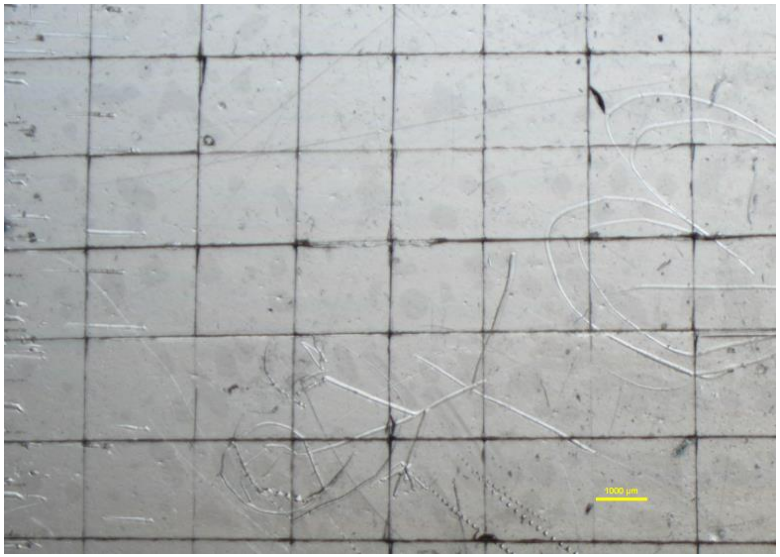




Scoring the Size you Desire (cont.)

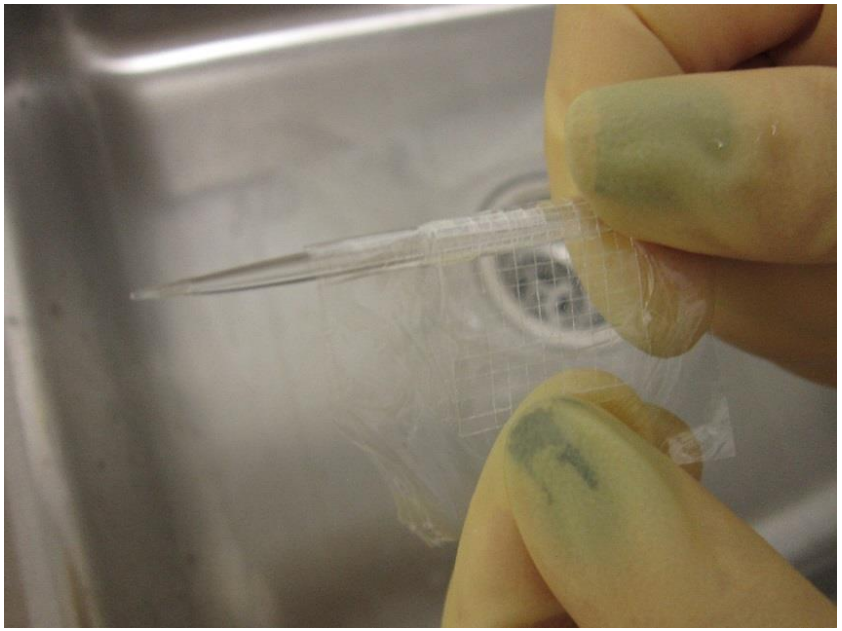
- Rotate entire block and get the longer ruler lined up
- Score in the opposite direction
- Try to keep the lines the same distance as the first direction so you have clean squares.

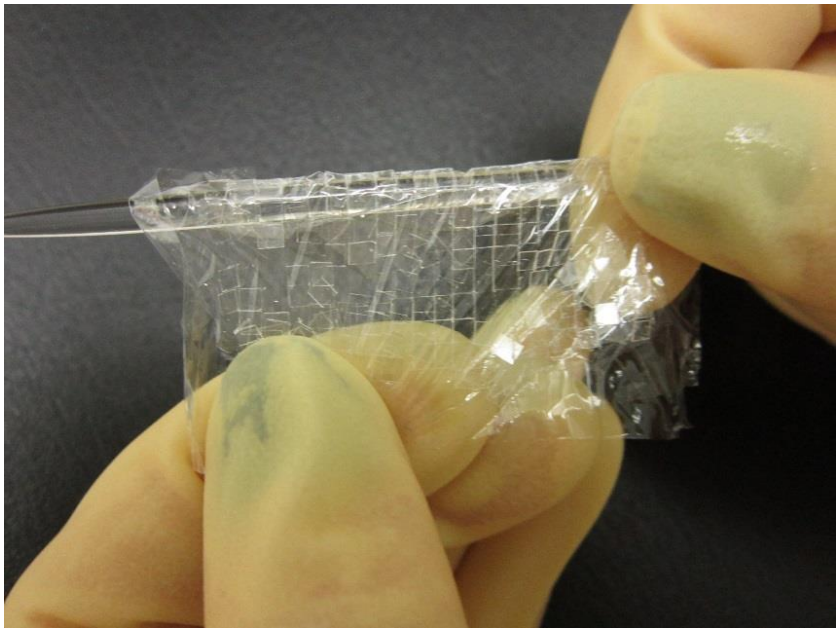




Breaking the Glass

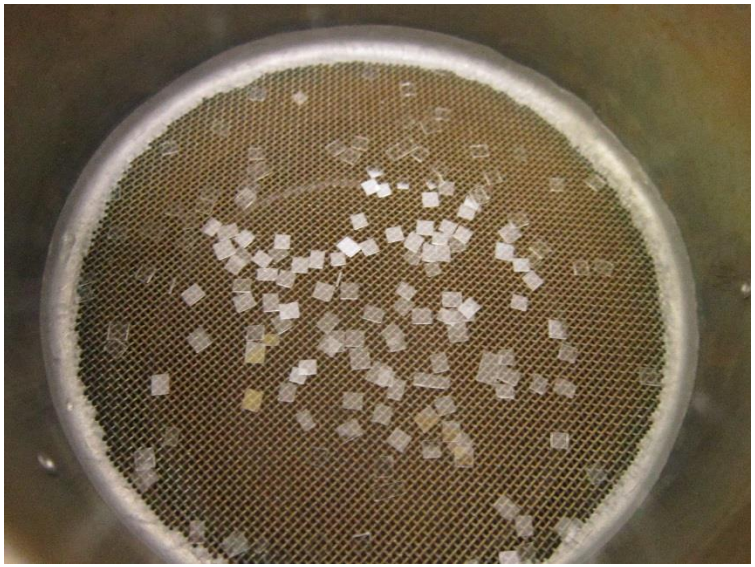
- Place a piece of plastic wrap on top, offset from the bottom layer.
- Gently roll around a ball point pen or rod to break the scribed lines.
- The plastic wrap should stick together like a sandwich to keep the micro cover glass from falling out so you can either open it and wash right away or make a reserve of ready to wash cover glass for later washing.





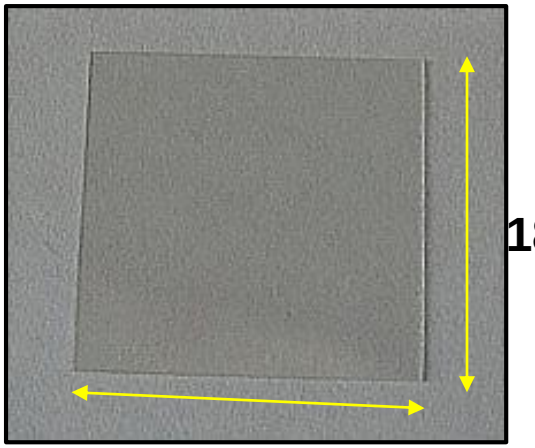
Washing

- Remove the plastic wrap from the broken cover glass.
- Place the pieces in a sieve to be washed—usually just one large cover glass per sieve.
- Run DI water over the pieces and soak briefly.
- Once washed, make sure all the micro cover glass settle to the bottom without touching one another.
  - If they end up on top of each other they will get stuck and never separate smoothly.
- Place in an oven on low heat for drying.
- Once dry, the micro cover glass can now be placed in their appropriately labeled boxes.

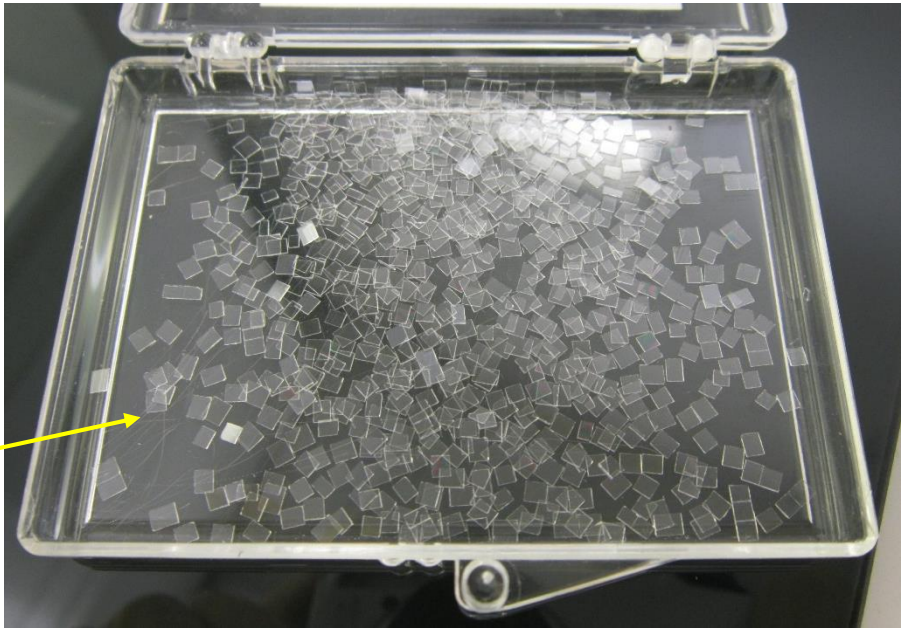


Large vs. Small

- Full Size Cover Glass
  - ❖Hair
  - ❖Fibers
  - ❖Size distribution
  - ❖PLM data for particles larger than 50 µm
- Micro Cover Glass
  - ❖Single Particles
  - ❖Less than 50 µm
  - ❖Non-homogeneous aggregate



18mm²



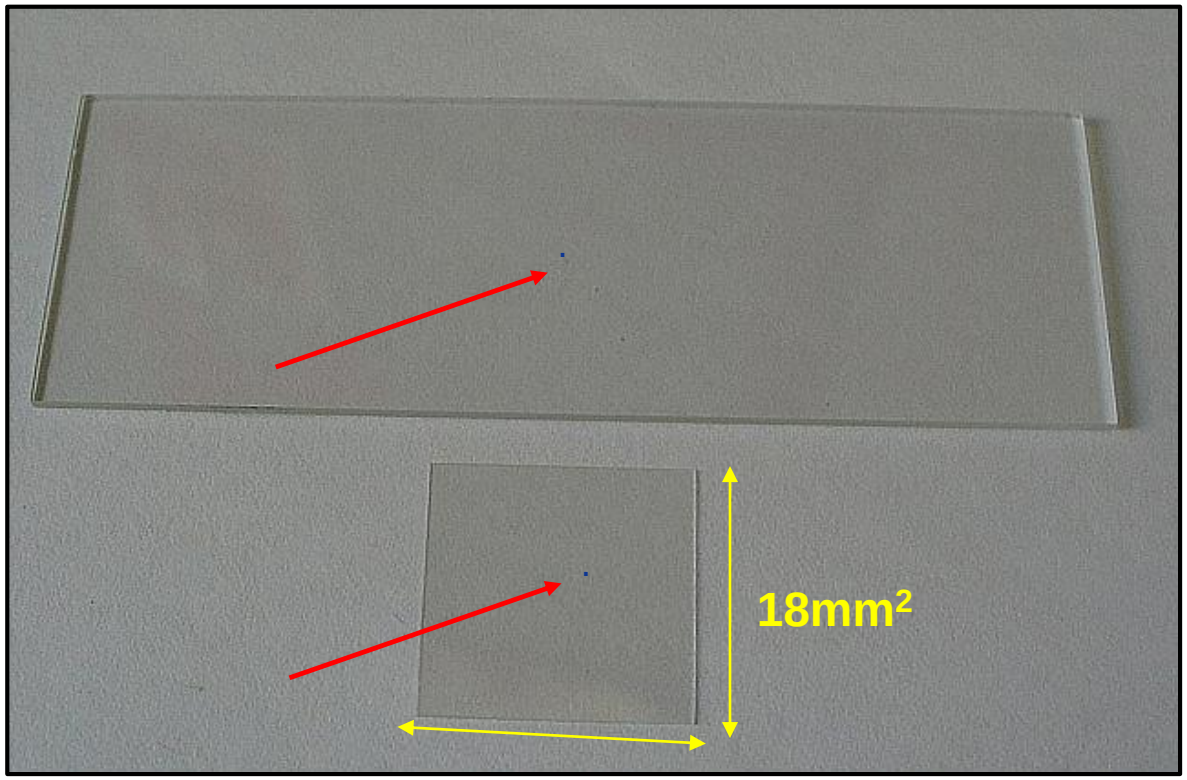
1-5 mm²

Advantages of the Micro Cover Glass

- Variety of sizes (1-8 mm^2 is common but you can make whatever size desired)
- Very clean
- Do not adhere to one another once dry
- Square edges easily picked up from on top of one another
- Number of preparations on a single slide next to one another
- Pressing out samples on KBr
- Easily switch out liquids

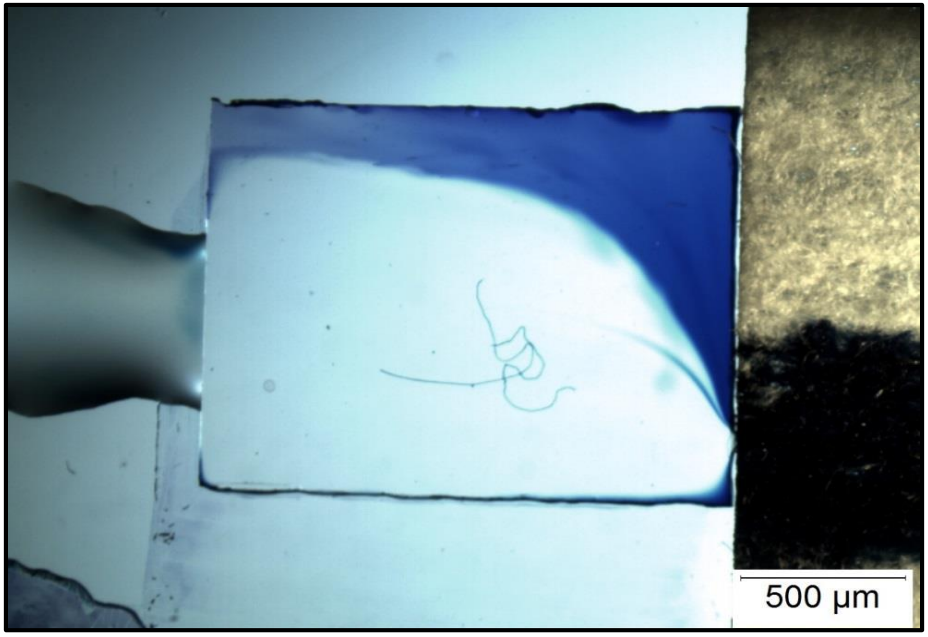
Common Uses

- Particle marker
- Photomicrography
- Keeping a particle in one location



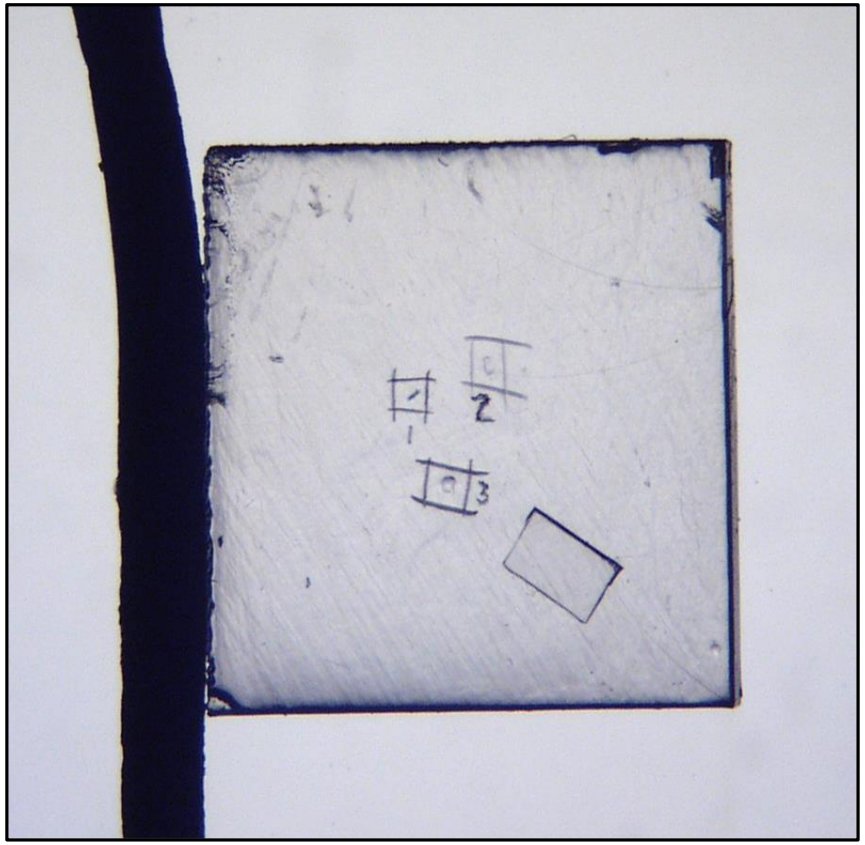
Common Uses

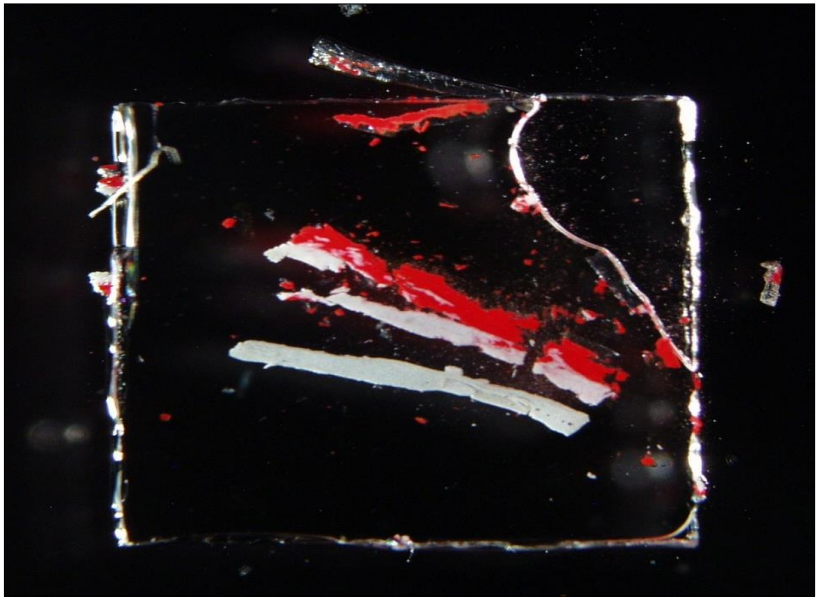
- Introducing refractive index liquids
- Other liquid exchange



Common Uses

- Pressing out substances onto KBr crystals
- Squishing a sample
- Separating layers





Thank you for joining us.

Josephine Mueller

Cleanroom Microscopist

jmueller@mccrone.com • www.linkedin.com/in/josie-mueller • (630) 887-7100