

Handling and Mounting Thin Plates

Thin plates are prone to cracking, and this broadens their mosaicity. Minimizing stresses at every step is the key to keeping your plates intact.

When using regular MicroMounts™ or MicroLoops™, chose an aperture size that's just a bit smaller than the crystal size, so that the plate's edges rest on the edges of the aperture. This will reduce excess liquid and stresses during flash cooling due to differential contraction of this liquid and the crystal.

MicroMeshes™ can provide continuous support for thin plates. MicroGrippers provide the most delicate support possible, although they tend to trap more liquid. Their long, thin fingers are extremely flexible, and are more likely to deform than your crystal. In either case, slide the mesh or gripper underneath your crystal and gently lift out of solution. Then use paper wicks to remove excess liquid as necessary.

Thin plates, like thin rods and needles, can quickly dry out in ambient air, so be sure to work quickly, to work in a humidified environment, or to first transfer the crystals to LV CryoOil or a similar low-viscosity oil before mounting.

If your plate is adhered to the bottom of a well or glass slide, try gently flexing the bottom of the well by pushing with a rounded point (e.g., a pair of tweezers) from the other side. Then try gently pushing on the crystal using a MicroSpoon™ from MicroTools™ Kit 2, carefully flexing the tip so that it bends flat against the well and into the plane of the crystal.

If your crystal still shows cracks and/or poor mosaicity, use a smaller X-ray beam and search for an uncracked region with smaller mosaicity.

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