How To Make Mylar Cell Dishes for Track Segment Experiments

Cleaning

- Soak dishes in hot water for 10-15 minutes, then peel Mylar from stainless steel rings.
- Sand the bottoms of the rings with medium grit emery cloth until all the epoxy is removed.
- Scrape the inside edge of the rings (a triangular deburring tool works best) to remove any epoxy.
- Wash rings vigorously in detergent, rinse thoroughly, and allow to air dry.

Preparation

- Roll out the Mylar onto a clean piece of glass or polished metal.
- Tape the edges of the Mylar down using autoclave tape (to keep it from being baked on), making sure to remove all wrinkles.
- Cover the Mylar so that it doesn't collect dust (it is statically charged).
- Prepare the epoxy[1] according to the directions.

Gluing

- Use a paint brush or a small roller[2] to spread the epoxy in a thin layer on the bottom of the rings. Thick layers of epoxy will tend to spread inside the ring and will be more difficult to remove later.
- Place the rings on the Mylar, leaving some room for separating them after baking.
- Bake dishes in an oven at 150º C for one hour. This will cure the epoxy and shrink the Mylar so that it is taut.
- After cooling, separate dishes by cutting Mylar.
- Trim excess Mylar from outside edges of dishes using a sharp blade or triangular deburring tool.

Sterilizing

- Soak in 70% ethanol for ½ hour.
- Remove from alcohol inside clean bench, stand on edge and allow to dry.
- Place in 38-mm diameter plastic cell culture dishes. Bottoms of plastic dishes will be used to cover Mylar cell dishes during the irradiations.

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[1] Master Bond EP21, Master Bond, Inc., 154 Hubert St., Hackensack, NJ 07601. Phone: 201-343-3983

[2] A roller assembly can be made from a piece of 1/8" diameter rod bent in the shape of a "7" with the long arm as a handle and a 1½" long piece of Tygon tubing pushed onto a similar length piece of 1/8" i.d. metal tubing as the roller (dimensions can be modified).