

# Sample Preparation

## Grids

**Grids to Get:** Grids 25 um thick, 3 mm in diameter, film on “dull” side, “shiny” side has the metal only, the dull side has the film

- Ultrathin Carbon Film on a Lacey Carbon Support Film
- [https://www.tedpella.com/Support\\_Films\\_html/Support\\_Films\\_and\\_Substrates\\_Overview.aspx](https://www.tedpella.com/Support_Films_html/Support_Films_and_Substrates_Overview.aspx)
- 01824 Ultrathin Carbon Film on Lacey Carbon Support Film, 400 mesh, Copper
- 160 PELCO® TEM Grid Storage Box



## Basic Shake and Bake

Put a small amount of powder in Eppendorf tub (enough to coat the bottom). Put one grid into the tube. Close the tube and shake for 1 minute. Open the tube and remove the grid. The grid should have enough material on it and is ready to be imaged in the TEM.

## Instructions for Nanoparticle Dropcast TEM sample preparation

Things you will need:

- Ethanol (or water, IPA, or dimethyl carbonate)
- A small metal scooper
- A sonicator
- Several small vials that are centrifuge compatible
- A centrifuge

- Nanoparticles
- UltraThin 3 nm Carbon Grids
- Glass slide

1. Check the MSDS for mixture with ethanol (make sure the nanoparticles are NOT pyrophoric)
2. Use the small metal scooper to extract about ½-1 cms worth of nanoparticles
3. Place the nanoparticles in a small vial
4. Fill the small vial with ethanol up to the 1 cm below the rim
5. Sonicate the filled small vial for 10 minutes on high power (make sure to find an anti-node)
6. Centrifuge for 20 minute (make sure to balance the centrifuge)
7. Use a pipette to collect several uL of fluid just above the concentrated part at the bottom of the vial. See the arrow below . The pipette should just touch above dark part.



8. Deposit 1 uL of fluid onto the dull (not shiny) side of the grid.
9. Let the grid dry on a glass slide.
10. Vacuum bake at 50-400 degree C for several hours if contamination is found of the surface.
11. Plasma clean as needed.

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