

# Sample Preparation of Air-Sensitive Particulate Samples for Micromag Measurement

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**Samples must have a final size smaller than 4mm x 4mm x 1 mm or they may not fit between the polepieces.**

1. Using the sealer, seal 3 sides of a piece of plastic to form a well that is 4mm wide. The sample bag should be long enough to be manipulated inside the glove box.
2. Weigh the bag using the lab scale. Record the mass in the log book.
3. If you are preparing multiple samples, identify each bag, but write only far away from the portion of the bag where the sample will be.
4. Using a razor, cut a very small piece of paraffin wax. There needs to be enough wax to encapsulate all of the particles you will add, but no more than necessary (a few mg).
5. Put the wax piece(s) in the bottom of the plastic bag. Use a long wood stick (like on the end of a cotton-tipped applicator).
6. Weigh the bag on the same scale and record the mass of the bag + paraffin.
7. Transfer materials to the glove box.
8. Using a glass pipette as a funnel, add your powder sample to the bottom of the bag.
9. Use the sealer inside the box to seal the fourth side, making the sealed volume 4mm x 4mm x 1 mm. Make sure that there is no powder in the seal, or the seal will not be complete.
10. Remove all of your materials from the glovebox.
11. Weigh the bag again. Record the mass of the bag+wax +sample in the log book.
12. Microwave water till hot.
13. Put the sample end of the plastic bag in the hot water to melt the paraffin wax melts. You may need to use your fingers or a tweezers to make sure the wax mixes with the sample. Be careful not to press too hard, or you may burst the bag.
14. Cut the sample around the sealing lines. If you cut too far into the seals, they will break and your sample will be exposed to air.
15. Put the sample into a sample and label it.
16. Calculate the amount of sample and record in the log book, and on the sample box. All sample boxes must be clearly labeled so that we can look in the log book and tell what sample is what.