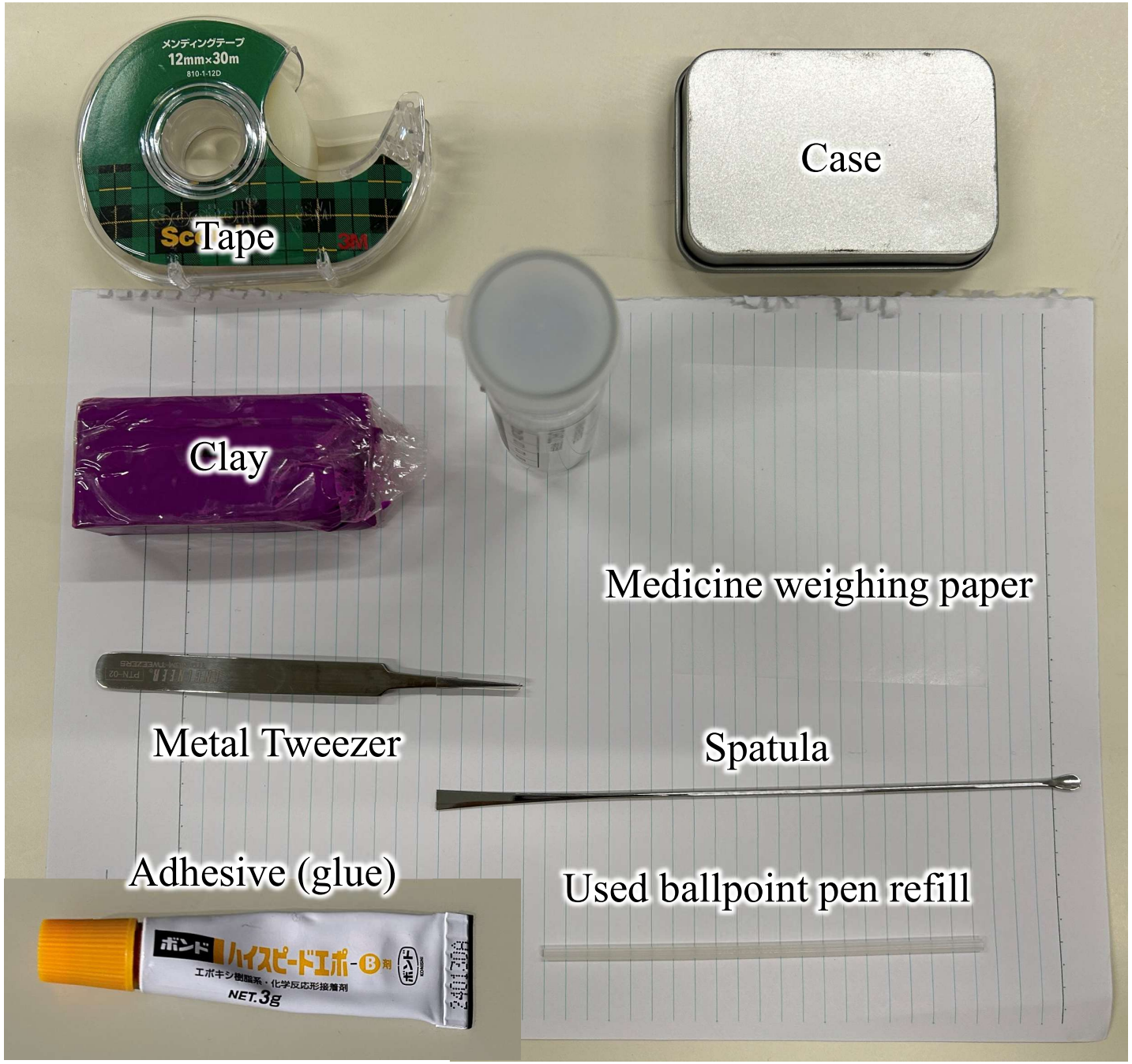
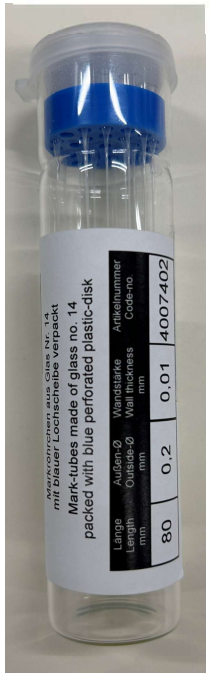
Tools Needed for Capillary Sample Preparation



Glass capillaries



Ruler

About the Capillaries

- **Material**

Material	Characteristics
Lindemann glass	Low background level Usable up to approximately 600℃
Quartz	For high-temperature measurements from 600℃ onward
Borosilicate	Glass with higher strength than Lindemann

※ Currently, using Lindemann glass is recommended due to the temperature-change measurements are not supported.

- **Capillary Inner Diameter**

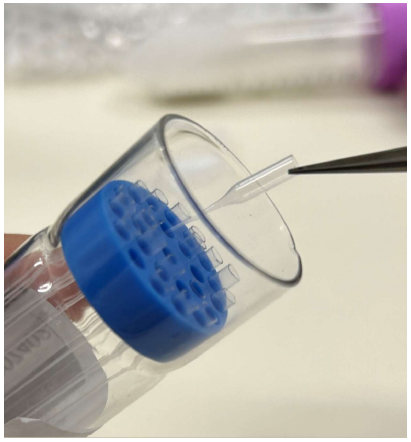
  - **Narrower capillaries yield sharper diffraction peak widths.**
  - **If particle size is large, clogging may occur during filling, choose a larger diameter when necessary.**
  - **Thinner capillaries are more fragile and require careful handling.**

※0.2–0.4 mmφ is a common size.

- **Price**

A vial of 25 pieces typically costs 20,000 – 30,000 JPY.

Capillary Sample Preparation Procedure

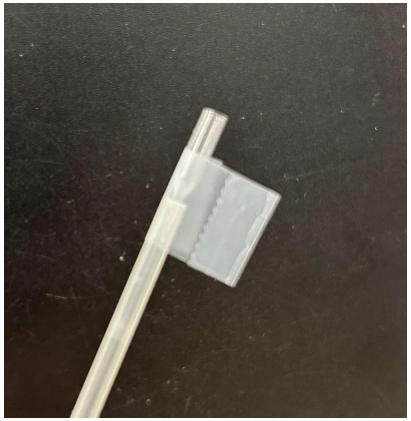


① Use the metal tweezer to grip the funnel end of the capillary in the vial and pull it out.

※ Grip with the minimum necessary force to avoid breakage.

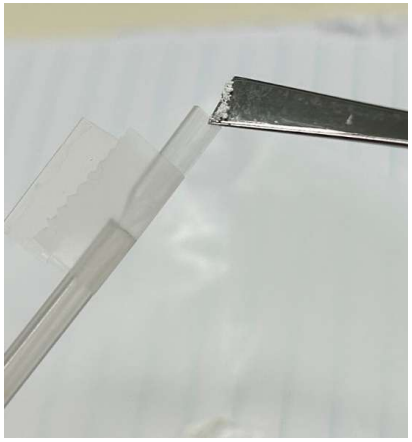
② Once the capillary is pulled out to a sufficient length, grasp the funnel end with your fingers and remove it.

※ Aside from the funnel end, the capillary is very fragile. Do not use the tweezer elsewhere or it may break. Use your fingers.



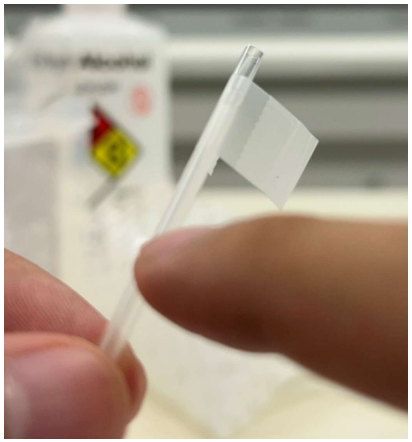
③ Insert the capillary onto a ballpoint pen refill and secure it with mending tape.

※ Tape it well so the capillary does not slip off the refill during step 4.

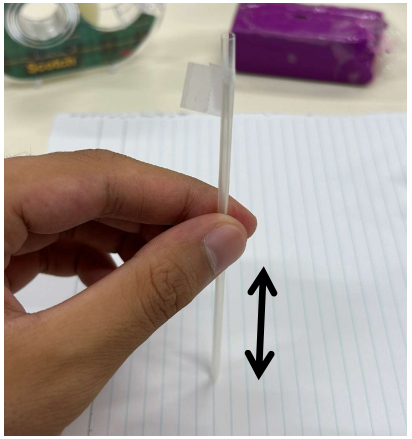


④ Using the spatula blade, introduce the powder into the capillary through the funnel end.

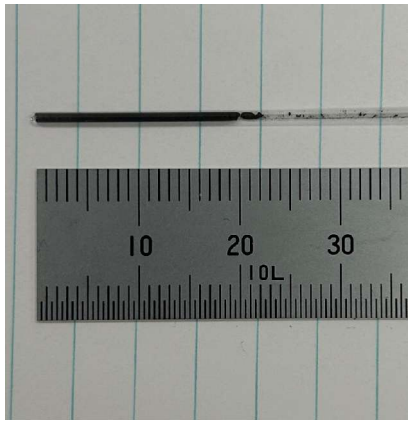
※ Add only small amounts at a time to prevent clogging.



⑤ Lightly tap the refill with your finger or gently tap it on the table to help the powder settle to the tip of the capillary.

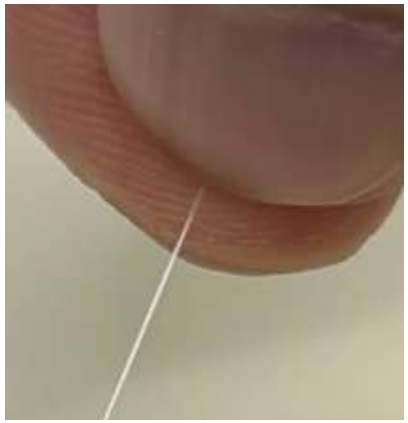


Capillary Sample Preparation Procedure

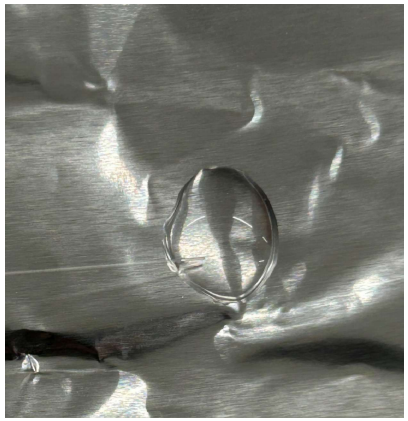


⑥ Repeat steps 3 and 4 until the powder is filled up to 2 cm from the tip.

※ To prevent the sample from scattering when breaking the capillary, do not fill it beyond 2 cm.



⑦ Pinch the capillary 3 cm from the tip between your index finger and thumb as shown, then snap it off using the thumbnail.



⑧ Apply adhesive (e.g., a two-part epoxy) to seal the broken end.

※ If not sealed, powder may spill out of the capillary.

⑨ Fix the capillary in the bottom or lid of the case using clay and store.

※ Clay softens at body temperature, adheres to the glass without cracking it and easy to handle.