

Freezer Mill Protocol (07/31/2019)

Wear the proper protection equipment (PPE)

Cryogenic gloves and goggle must be worn when using the freezer mill.

Lab coat is recommended!

Load samples

1. Install one end plug to the cylinder; **load the frozen sample first and then insert an impactor**; close the cylinder with the other end plug. Shake the vial to make sure the impactor has room to move back and forth.
2. Insert vial into the freezer/Mill
3. Open the chamber by turn the handle to the left, and position it to pass through the slot. Load vial to the chamber.
 - a. Mono: Chamber 1; Dual Chamber 1 and Chamber 2
 - b. Always use the proper adapters for mid-size, small, and microvials.
4. Close the gate, turn handle to the right, and fold down the handle to lock the gate.
5. Close the lid and latched.

Set up a run

1. In the home screen, click the control panel.
2. Select Mono or Dual grinding modes
 - a. Mono: Chamber 1; Dual: Chamber 1 and 2
3. Select Auto-Fill of LN
4. Precool: Samples must be precooled before grinding. Suggested: 5 – 10 min
5. Run time: Grinding time. Suggested: 1 min
6. Cool time: Cool down time. Suggested 1 min
7. Cycles: Grind/Cool down cycles.
 - a. One run is suggested to be less than 30 min.
 - b. One run= Precool+ Cycles x (run time + cool time)
8. Rate: number of back-and-forth Cycles Per Seconds (CPS). Min 5 CPS; Max 15 CPS
9. Start a run

Remove vials from the chamber

1. Hold the lid down with one hand and the other hand pull the latch to open the lid.
2. When the lid is in the upright position, open the chamber and remove vials.

Cleaning the vials

1. The vial is sensitive to organic solvents. Only use water and soap to clean the vials