

Safety Note # 152

Laboratory Mill Safety



Photo from Thomas Scientific

Laboratory mills are devices used for grinding of plant tissue or other similar materials. Use of laboratory mills may present a variety of potential safety hazards. This Safety Note provides tips that should be followed to prevent an injury due to laboratory mill operations. Users of laboratory mills should also review the operations manual for the specific type of mill they are using.

Mill Set-up

- Use the right tool for the job. Laboratory mills such as the Thomas Scientific Wiley Mill are intended for grinding plant samples; they should not be used to grind soil or other hard materials.
- Before using, always inspect the laboratory mill for damage or disrepair.
- If a laboratory mill fails the pre-use inspection, notify your supervisor and remove the mill from service by attaching a red tag that states "DO NOT USE." Complete red tag with appropriate information.
- Make sure the mill is unplugged before making any adjustments or cleaning.
- With the mill unplugged, remove the cover and inspect the feed chute, grinding blades, screen and delivery chute.
- Confirm that the proper screen and delivery chute are attached and change as necessary.
- If parts of the mill need cleaning, use a small brush, a vacuum, and/or compressed air (See Safety Note #153). Ethanol may be used if necessary to prevent contamination of samples.

Operating Tips

- Make sure the sample is dry before milling; samples containing excessive moisture or oils will stick to the walls of the mill chamber.
- Use in a well ventilated area. If samples are excessively dusty, use the mill under a ventilated hood, or use a fan to exhaust the dust outside the work area.
- In general, respiratory protection should not be necessary when using a laboratory mill. However, a paper dust mask (not an N-95 respirator) may be used voluntarily for nuisance dust. If samples are suspected of containing molds or other disease-causing agents, contact ANR Environmental Health & Safety (<http://ucanr.org/askehs>) to conduct an exposure assessment to determine the appropriate personnel protective equipment.
- Wear eye protection (safety glasses or goggles) when using a laboratory mill.
- Do not put your hands or fingers inside the feed chute when feeding samples into the mill. If necessary, use a feeder stick to push material into the grinding chamber.
- If the feed chute becomes clogged or material becomes jammed, immediately shut off the mill.

Cleaning and Shutdown

- Clean the mill as described above in Mill Set-up.
- It is a good practice to unplug the mill when not in use.
- Consult the operator's manual for maintenance procedures such as lubrication or blade replacement.