

## STANDARD OPERATING PROCEDURE OF HIGH SPEED CENTRIFUGE

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	<b>AREA:</b> PHARMACEUTICS LABORATORY	<b>PAGE NO: 1 - 3</b>
	<b>SUBJECT:</b> SOP FOR HIGH SPEED CENTRIFUGE APPARATUS	<b>EFFECTIVE DATE:</b> 25/02/2022
		<b>REVIEW PERIOD:</b> 25/02/2023

### **Purpose:**

To provide a procedure for the operating of Ball mill

### **Scope:**

Applicable to operation of Ball mill

### **References:**

Equipment Manual

### **Safety Issues and Precautions:**

- Wore Head cap, Mask, Hand gloves and other safety requirements during the performance of stated activity
- Please make the entry of Usage with require details in the Equipment log book
- Handle the Instrument properly with care

### **Precaution:**

1. The work surface must be level and firm. Do not use the centrifuge on an uneven or slanted work surface
2. Do not open the lid while the rotor is moving. Even though many centrifuges have a "safety shutoff" if the lid is opened, the only thing this does is stop powering the rotor.

The rotor will still spin due to its own inertia for a while until friction slows and eventually stops it.

3. Wear a face shield and / or safety goggles if you have to work anywhere near a centrifuge that's in use. Accidents happen-- sometimes under the most freakish or unexpected circumstances. The rotor is spinning very rapidly and generates extreme forces.
4. If you see it wobbling or shaking, pull the plug. A little vibration is normal, but excessive amounts can mean danger. FIRST, double check that you correctly balanced the tubes. If the answer is yes and the wobbling still happens, contact the manufacturer or dealer and get the unit serviced. If you bought the centrifuge from us, here's the contact info if the unit needs service or replacement. Do NOT continue to run a centrifuge that wobbles visibly when the rotor is spinning.

### Procedure:

- 1) Identify the speed and duration at which you wish to centrifuge samples PRIOR to using this instrument.
- 2) 2 Check the rotor you intend to use and be certain that the rotor is rated for the speed at which you would like to use it.
- 3) 3 If the rotor is not capable of being operated at the target speed, you will need to identify the rotor that is capable of being used at the desired speed, and then transfer your samples to a centrifuge tube that will fit and rebalance the samples, remembering to include the lids when balancing.
- 4) 4 Place the rotor in the centrifuge with the 2 pins on the underside of the rotor forming a cross with the 2 pins found on the spindle of the centrifuge. Check the name of the rotor and confirm the target speed. Locate the correct lid for the selected rotor and place it beside the centrifuge.
- 5) Place the samples into the rotor. If the samples do not all have the same mass, place samples with the same mass on opposite sides of the rotor.
- 6) Once the samples are loaded, check the rotor type again, confirm that you have the correct lid for the selected rotor and then screw the rotor lid onto the spindle.
- 7) The rotor lid set screw turns opposite to "normal" screws. Check for proper set screw direction by looking at the diagram on the lid.
- 8) If this is a swinging bucket rotor, there is no lid.
- 9) Once the rotor lid is secured, close the centrifuge lid and set the desired temperature, the desired speed and the desired spin time.
- 10) When everything is set, press the "Start" button and wait for the instrument to ramp up to the desired speed.

- 11) It is normal to see a small vibration in the instrument as the speed moves from 100 to 2500 rpm.
- 12) Any large vibration in the instrument or irregular noise may indicate that something has gone wrong with the run. Press the "Stop" button and move away from the instrument.
- 13) Immediately contact a faculty member who can assist you before you open the lid to the centrifuge.
- 14) If no problems are detected as the instrument reaches the desired speed. You may leave the area until the run is complete.
- 15) When the run has completed and the rotor has come to a complete stop, you may unscrew the rotor lid and carefully remove your samples.
- 16) Should a sample vial have leaked during the run, you MUST IMMEDIATELY clean the spill and dry the rotor.
- 17) It is easy to miss spilled liquids in the bottom of the positions of the rotor; however, this liquid will cause an imbalance in the subsequent run that may lead to catastrophic failure.
- 18) Remove the rotor from the centrifuge and place in the appropriate box adjacent to the unit.
- 19) If the rotor is a fixed angle rotor, put the lid on top of the rotor in the box.
- 20) Should a sample vial have leaked during the run, you MUST IMMEDIATELY clean the spill and dry the rotor.
- 21) It is easy to miss spilled liquids in the bottom of the positions of the rotor; however, the liquid will cause an imbalance in the subsequent run that may lead to catastrophic failure.
- 22) Clean the area around the centrifuge with 70% ethanol (denatured) and wipe dry.
- 23) This MUST be done following EVERY run. Failure to clean up after you may ruin subsequent users' experiments and/or facilitate the spread of contamination throughout the department.

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