

Revision - ---	Document Code WI- ML- 6175	Document Title: Standard Operating Procedure (SOP) for Tubular Centrifuge	 دانشگاه علوم پزشکی و خدا بختی و درانی استان خراسان و اسلام و پزشکی
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1 Standard Operating Procedure (SOP): Hermle Centrifuge

1. Objective

To define the standard operating procedure for the safe and effective operation of the German-made Hermle centrifuge in a laboratory setting.

2. Scope

This procedure encompasses safety protocols, sample preparation, device settings, maintenance, and cleaning requirements.

3. Responsibility

The responsibility for implementing this procedure lies with the designated laboratory experts.

4. Operating Procedure

- Pre-Operation:**
 - Ensure the centrifuge is placed on a stable, level surface.
 - Verify that the rotor chamber and tube buckets are clean and dry.
 - Inspect all tubes and containers for cracks or defects. Select the appropriate rotor based on sample type and volume.
- Sample Preparation:**
 - Fill tubes to a maximum of **80% of their volume** to prevent overflow or contact with the lid.
 - Place samples in the centrifuge in a balanced configuration. If working with an odd number of tubes, use an identical tube filled with water to achieve proper weight balance.
- Execution:**
 - Power on the device.
 - Set the required speed (RPM/RCF) and duration according to the specific experimental protocol.
 - Ensure the lid is securely closed before starting the cycle.
- Post-Cycle:**
 - Wait for the rotor to come to a **complete stop** before opening the lid. Do not use external force or mechanical overrides to slow the rotor down.
 - Power off the device after use and replace the protective cover.

5. Safety Precautions

- Personal Protective Equipment (PPE):** Always wear a lab coat, safety goggles, and a face shield when handling hazardous biological samples.
- Containment:** Use safety-certified centrifuge tubes and lids.

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- **Accident Response (Tube Breakage):** If a tube breaks during a run, **do not open the centrifuge lid for at least 30 minutes** to allow aerosols to settle. After this period, clean the chamber and components thoroughly using appropriate decontamination methods.
- **Operational Limits:** Never exceed the maximum speed (RPM) specified for the rotor or the tubes.
- **Magnetic Interference:** The centrifuge utilizes sensitive internal mechanisms; avoid placing the unit in close proximity to strong external magnetic fields, as these may interfere with operation.

6. Maintenance and Care

- **Routine Cleaning:** Clean the inner chamber after every use, particularly in diagnostic laboratories. Clean the rotor and removable components using mild detergent and water.
- **Environment:** Store the centrifuge in a clean, dust-free environment.
- **Periodic Calibration:** Regularly check the accuracy of the tachometer (speed) and the timer to ensure consistent results.
- **Operational Safety:** Never attempt to open the lid while the rotor is in motion.
- **Documentation:** Maintain a log of usage and calibration for quality assurance.

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