

Revision: ----	Document Code: WI- ML- 8773	Standard Operating Procedure (SOP) for the Behdad 50L Digital Incubator	 دانشگاه علوم پزشکی و خدمات بهداشتی و درمانی آستان قدس اصفهان
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Standard Operating Procedure (SOP): Behdad 50L Incubator (37°C)

1. Objective:

To outline the operational and maintenance procedures for the Iranian-made Behdad 50-liter incubator.

2. Operating Range:

- **Temperature:** From 5°C above ambient temperature up to 80°C (+85°C design limit).
- **Precision:** $\pm 0.1^{\circ}\text{C}$.
- **Requirement for 37°C operation:** To maintain stability, the ambient temperature must not exceed 30°C.
- **Environmental Limits:** Max ambient temperature: 30°C; Max humidity: 40%.

3. Responsibility:

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

4. Operating Procedure:

1. **Display:** To extend display life, the screen dims automatically during operation. Press the F/C key to reactivate it when needed.
2. **Prohibitions:** Do not use the incubator near flammable or combustible materials.
3. **Personal Protective Equipment (PPE):** Always wear safety goggles and gloves. Use tongs for handling waste or samples.
4. **Safety:** Avoid standing directly in front of an open incubator door to prevent the inhalation of potentially hazardous vapors.
5. **Maintenance Protocol:** Before any repairs, the incubator must be thoroughly disinfected, and all electrical connections must be disconnected.

5. Safety and Maintenance:

1. **Placement:** Ensure the incubator is positioned correctly with all ventilation ports unobstructed.
2. **Chemical Hazards:** Do not introduce acidic solutions or materials that emit corrosive vapors into the chamber, as they will damage the shelves.
3. **Temperature Monitoring:** Check the incubator temperature in the morning and evening. The internal temperature should not fluctuate by more than 1°C per day.
4. **Calibration:** Calibrate the thermostat based on precise external thermometer readings. (Note: 35–37°C is the standard range for bacterial cultures).
5. **Electrical Inspection:** Inspect all power cables every 3 to 6 months, depending on the age and usage of the device.
6. **Cleaning Schedule:** In cell culture or microbiology labs, clean the incubator every 14 days, or immediately following any chemical or pathogenic spill.

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7. Cleaning Procedure:

- Wipe internal and external surfaces with 0.5% sodium hypochlorite.
- After 10 minutes, clean the surfaces again with 70% ethanol.
- Ensure no cleaning agents come into contact with electrical wires.
- Allow surfaces to dry completely before reconnecting the power supply.

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