Hot Air Oven

A Hot Air Oven is a laboratory apparatus used for sterilization, drying, and heat treatment of materials using dry heat circulation. It is commonly used in pharmaceutical, medical, chemical, and research laboratories.

Key Features:

- Uses dry heat for sterilization (no moisture involved).
- Temperature range: Typically 50°C to 250°C.
- Digital or analog controls for precise temperature regulation.
- Double-walled insulation for uniform heat distribution.
- Forced air circulation to ensure even heating.

Working Principle:

1. The heating element raises the internal temperature.
2. Hot air circulates inside the chamber, eliminating moisture and microorganisms.

3. The process ensures complete sterilization after a specific duration (e.g., 160°C for 2 hours or 180°C for 30 minutes).

Applications:

- Sterilization of glassware, metal instruments, and powders.
- Drying of laboratory samples and chemicals.
- Heat treatment of pharmaceutical products.
- Material testing in industries like textiles and electronics.