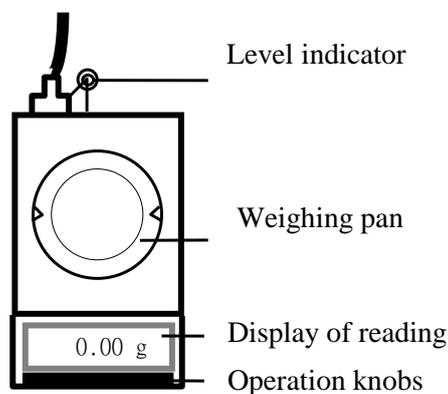


T9 Electronic Balance



Electronic balance



Analytical balance

Figure T9-1 Electronic balances in the lab

The electronic balances available in the lab generally are with a readability of 0.01 g and a maximum weighing capacity of 610 or 820 g. On the other hand, the most commonly encountered analytical balances have a maximum capacity of 220 g; measurements can be made with a standard deviation of ± 0.1 mg.

Operation

1. Place electronic balance on a stable, vibrating-free benchtop. Avoid direct sunlight, excessive temperature fluctuations, and drafts. To maintain calibration, never move the balance.
2. Do not overload the balance. Maximum load of an electronic balance in lab is usually 610 g.
3. Check to see that the balance is level and clean before use.
4. Warm up the balance for 30 min before use.

5. **Switching on:** Remove any load from weighing pan and press «**On**» key briefly. The balance performs a display test (all segments in the display light up briefly). When zero is displayed, the balance is ready for operation.
6. Put weighed object in the center of weighing pan. Read digital readout for mass.
7. Protect the balance from corrosion. Objects to be placed on the pan should be limited to nonreactive metals, nonreactive plastics, and vitreous materials.
8. Use folded weighing paper, beaker or bottle as container while weighing. Do not put chemicals on the pan directly.
9. Always allow an object that has been heated to return to room temperature before weighing it. The buoyancy of convective airflow around the pan will affect object's apparent mass.
10. **Taring:** Place empty container on the balance, and the weight is displayed. Press the «**Tare**» key briefly, the weight of the container is automatically subtracted, and display shows 0.00. Add weighing sample to container, then the net weight is now displayed.
11. Keep the balance and its case scrupulously clean. The balance area has a soft brush for this purpose.
12. After working with chemicals, it is advisable to wash or clean the weighing pan with a damp cloth but do not use solvents. Corrosion may occur if corrosive substances are deposited on chrome steel for an extended period of time.
13. Do not invert balance upside down to avoid damage to the parts inside.
14. **Analytical balance** is an instrument with high precision with maximum load of 210 g. Close its windshields while zeroing and weighing, otherwise the reading is fluctuated and inaccurate.

References

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3. Skoog, D. A.; West, D. M.; Holler, F. J.; Crouch, S. R. *Analytical Chemistry*; 7th ed.; Saunders College Publishing: New York, 2000.