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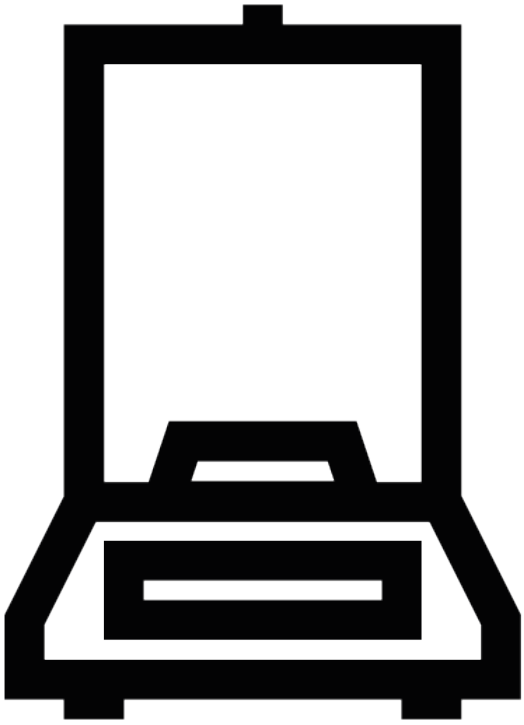
Frequently Asked Questions

Basics of Weighing



Definitions for typical technical terms and tips on how to achieve the best possible weighing results

Weighing is one of the most routine tasks in the laboratory. Getting accurate and reproducible weighing results relies on a basic understanding of weighing principles and methods. In this Q&A session, Christian Weidner, Product Manager for Sartorius Lab Weighing, covers some of the common questions about laboratory balances and weighing. Including important terms, weighing best practices, and tips for addressing environmental effects found in the laboratory.

1. What is the difference between tare and zero?

CW: "Zero" means that you zero the display when the weighing pan is not loaded. Zeroing a balance is only possible within a certain limit of the weighing range itself. It does not reduce the maximum capacity of the balance. "Tare" means you zero the display when the balance is loaded. An example would be to zero the display when an empty container is placed on the balance.

2. What is the best way to keep the balance clean after use?

CW: You can clean the balance using a brush, microfiber cloth, or cotton cloth. Depending on the balance type, you can also use distilled water or cleaners like ethanol. Refer to the equipment manual for detailed cleaning instructions.

3. What is the difference between the terms E and D? Sometimes they are equal, and sometimes they are not.

CW: D is the readability vvalue of the balance; it is the scale interval. E is the value for type-approved balances. It is the minimum weight that you can measure on a type-approved balance, which can be different than the readability value or D.

4. What weighing units are available for balances?

CW: There are several weighing units available on laboratory balances. Besides gram, kilogram or milligram, other units like carat, pounds, or ounce are also available. The choice of units depends on the balance type, and if it is a standard or type-approved balance. Make sure to align the weighing unit to your regional regulations.

5. When weighing with a 50 ml or larger volumetric flask, the weight drifts for a long time and sometimes won't become stable. What is causing this and how can we fix it?

CW: This can occur due to evaporation from the sample. To avoid this, we recommend using special vessels (e.g., narrow-necked or covered vessels), stabilizing the sample humidity before the weighing process, and working quickly.

6. What is the best way to maintain temperature balance between the inside and outside of the balance?

CW: The environmental conditions should always be kept as constant as possible, with no high fluctuations in temperature and humidity. Every type of balance requires a certain amount of warmup time once it's turned on before it can be used. To avoid a warmup period, we recommend not disconnecting the balance from the power source and leaving it in standby mode when not in use.

7. Our lab balance is on a lab bench, but when someone walks by, the weight fluctuates. What can be done to create a more stable surface for the balance?

CW: The workbench should always be placed close to or next to a wall. Instead of using a standard workbench, you can also install a weighing table that is made from granite stone, or similar material. These tables have absorbers to reduce environmental effects like vibrations. If this does not work, wall-mounted tables could help.

8. For the new weights, which is the initial choice of calibration intervals?

CW: The initial recommendation is to calibrate once a year, for three years. Depending on usage we recommend recalibration every year to every three years there on after.

9. What is the difference between readability and term scale interval?

CW: Both have the same meaning. They describe the smallest difference in mass that can be read on the balance. It is the smallest digital step of a balance.

10. Is there a self-levelling feature on your balances?

CW: The traditional way to level a balance is by using manual leveling feet. Real-time level support is an extension of this approach. The balance supports the user in leveling the scale in real time with real-time information on the display. The third and most convenient option is the automatic motorized leveling, where the scale levels itself automatically.

Reliable Weighing for Faster and Better Results

Learn more about Quintix and Secura Standard Laboratory Balances

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