Glossary of Terms

University Pipette Service
Measuring up to your expectations

ACCURACY: The degree of conformity between the measured volume dispensed by a pipette and the true or target volume, indicating how close the measured values are to the actual values.

ACCURACY TEST: Evaluating a pipette for calibration, is a procedure used to assess the pipette's ability to dispense liquid volumes accurately and consistently. It involves comparing the measured volume dispensed by the pipette to the intended volume, identifying any discrepancies, and making adjustments as needed to ensure accuracy and reliability in subsequent use.

ANALYTICAL BALANCE: A sensitive laboratory instrument used to measure the mass of substances with high precision and accuracy, typically used in analytical chemistry and quantitative analysis.

CALIBRATION: The systematic process of verifying and adjusting their accuracy and precision against known standards. It ensures that pipettes accurately dispense the desired volume of liquid as set by their settings. Calibration is crucial for maintaining the reliability and accuracy of pipettes, ensuring consistent and reproducible results in laboratory experiments.

CALIBRATION DRIFT: The gradual change in the accuracy or precision of a pipette or other measuring instrument over time due to factors such as usage, environmental conditions, or mechanical wear. It can lead to deviations from expected measurement values, emphasizing the importance of regular calibration and maintenance to ensure accuracy and precision.

DISPENSE: The process of releasing liquid from the pipette tip or barrel into a container or onto a surface.

EJECTOR BUTTON: A mechanism on the pipette used to expel the disposable tip after use.

EJECTION FORCE: The amount of force required to eject the disposable tip from the pipette after use.

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EVALUATION: The process of assessing the performance and compliance of pipettes with the manufacturer's specifications and industry standards. This evaluation typically involves testing various parameters such as accuracy, precision, and reproducibility of volume measurements. By conducting evaluations, companies can determine whether pipettes meet the required standards for use in laboratory settings. This process helps ensure the reliability and accuracy of pipettes, ultimately contributing to the quality of experimental results and analyses.

FULL RANGE READINGS: The ability of a pipette to accurately dispense liquid volumes across its entire range of measurement settings. This means that the pipette should provide consistent and precise measurements at all volume settings, from the smallest to the largest volume it is capable of dispensing. Ensuring full range readings is essential for reliable and accurate pipetting in various laboratory applications, as it allows users to trust the instrument's performance across the entire range of volumes required for their experiments.

GOOD LABORATORY PRACTICES (GLP): Guidelines aimed at ensuring the reliability and integrity of laboratory data and experiments. They cover areas such as experimental design, documentation, equipment calibration, and personnel training to minimize errors and maintain consistency in scientific research. Adhering to GLP standards enhances the quality and credibility of laboratory work.

HIGH VACUUM LUBRICANT (HV): A specialized silicone-based lubricant used in high vacuum systems to ensure smooth operation, prevent leaks, and maintain airtight seals. It exhibits low vapor pressure, high thermal stability, and resistance to harsh chemicals and temperatures, making it ideal for the use in pipettes.

LINEARITY: The consistency and accuracy of measurements provided by a measuring instrument across its operational range. It ensures that the instrument's response corresponds accurately to changes in the quantity being measured. Evaluating linearity is crucial for maintaining the reliability and accuracy of measurements in laboratory settings.

NIST TRACEABLE WEIGHT: A weight measurement that has been calibrated using a process traceable back to the standards maintained by the National Institute of Standards and Technology (NIST), ensuring accuracy and reliability in laboratory measurements.

O-RING: A sealing ring typically made of rubber or silicone, used in pipettes to prevent leaks and ensure a tight seal between moving parts.

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PIPETTE: A laboratory instrument used to accurately measure and transfer specific volumes of liquid.

PIPETTE AID: A handheld device that provides ergonomic support and controlled suction for precise liquid handling during pipetting tasks, reducing user fatigue and enhancing accuracy.

PIPETTE RANGE: The range of volumes that a pipette is capable of dispensing accurately, typically specified by the manufacturer.

PIPETTE REPEATER: A handheld device used in laboratories to dispense the same volume of liquid multiple times without the need for repetitive pipetting, enhancing efficiency and precision in repetitive tasks.

SINGLE CHANNEL PIPETTE WITH FIXED VOLUME DISPENSING: A type of pipette that dispenses a fixed volume of liquid in microliters, commonly used for repetitive tasks requiring consistent volume dispensing.

SINGLE-CHANNEL PIPETTE WITH MULTIPLE VOLUME DISPENSING: A type of pipette that allows users to adjust and dispense different volumes of liquid using a single channel, offering flexibility for various pipetting tasks.

MULTI-CHANNEL PIPETTE: A pipette with multiple channels, typically ranging from 4 to 12, allowing for simultaneous dispensing of multiple samples or reagents, thereby increasing throughput and efficiency in laboratory workflows.

TARGET VOLUME: The desired volume of liquid to be dispensed by a pipette, typically set by the user based on experimental requirements.

VOLUME ADJUSTMENT KNOB: A mechanism on the pipette used to set the desired volume for aspiration and dispensing.

VOLUME LOCK: A feature on some pipettes that prevents accidental changes to the set volume during pipetting.