Laboratory Best Practices

Maximize confidence and accuracy in your results by following sound methodology **every time.**

An important basic pre-requisite for high result reliability is regular checking of the **entire** analysis system: pipettes, photometer, reagents and general handling.

1 Pipetting

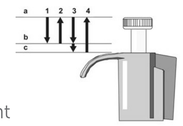
A Make sure to check the accuracy of pipettes to ensure they deliver the amount you expect.

B Correct pipette technique holds the pipette straight up and down when drawing and dispensing liquid.

VARIABLE PISTON PIPETTE

1: Push button
2: Ejector Button
3: Tip ejector
4: Cone
5: Volume scale

PUSH BUTTON



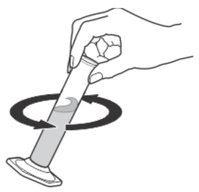
a: Rest position
b: First pressure point
c: Second pressure point

Refer to the Pipetting Guide that came with your pipette for more detailed techniques.

2 Mixing

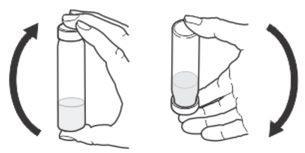
When adding reagent to a graduated cylinder or titration flask, swirl the sample gently to avoid atmospheric contamination (CO_2).

Follow the recommended method/working procedure for proper mixing.



SWIRL
(open cylinder)

ROTATE
(square sample cell)



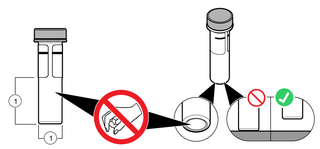
INVERT
(closed sample cell)

3 Sample Cell Handling

CLEANING AN EMPTY VIAL

Make sure to clean the sides of the cells prior to measurements to remove fingerprints and other impurities.

When handling sample cells (or TNT+/LCK cuvettes) do not touch the bottom or sides of the cell.



DO NOT TOUCH

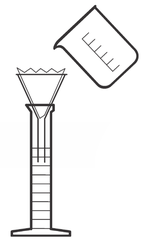
4 Sample Prep

Some methods require additional sample preparation prior to being able to complete testing. Check the method to see if one of these three additional procedures are required.

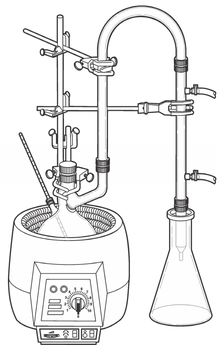
Distillation: Used to separate chemical compounds for analysis

Digestion: Using chemicals and heat to break down a substance into components that can be analyzed

Filtration: Separates particulates from an aqueous sample



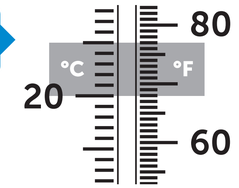
FILTRATION



DISTILLATION

5 Temperature

Unless otherwise noted, most methods are completed accurately when sample temperature is between 20-25 °C (68-77 °F). If a sample has been stored in a refrigerator, allow the sample to warm to room temperature prior to testing.

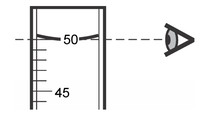


20-25 °C (68-77 °F)

6 Reading

When smaller sample quantities are used, the accuracy of the measurement becomes increasingly important.

Remember to read the meniscus to get an accurate reading.



READ THE MENISCUS

7 Reagent Care

Stability: Keep reagents in a cool, dark place. Use older supplies first. Moisture, high temperature, bacterial action, or light may affect reagent shelf life.

Reagent blank: A reagent blank refers to a correction for a small amount of error in test results that comes from the reagents themselves. It is only necessary to perform a reagent blank once per reagent lot number. Refer to the method for instructions on how to apply the results of the reagent blank reading.

8 Accuracy Check

When performing a method for the first time or if any changes have happened in personnel, equipment, or chemistry, complete the method using a known standard to demonstrate performance.

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