

Suggestions for Cleaning Cells

Why Clean Cells?

Clean cells are the foundation of any spectrophotometric or fluorometric analysis. The residue from previous analysis will cause inaccuracies, low sensitivity and lack of precision. More important, it will waste your time! Also inspect the condition of the cells. If they are cracked, chipped or scratched it is important to replace the cells with new ones as your time is more valuable than the cost of new cells.

How to Clean Cells:

It is important to determine the residual material in the cell that needs to be removed. The table below will give you some suggestions for cleaning:

Solvent	Material	Suggested Cleaning Methods
Aqueous	Protein, DNA, Biologics	Warm water with detergent, Dilute acid rinse, Copious water rinse
Aqueous	Salt solution	Warm water Acid rinse, copious water rinse
Aqueous	Basic solutions	Warm water with detergent, Dilute acid rinse, Copious water rinse
Organic	Oil based	Rinse with solvent, Warm water with detergent, Dilute acid rinse, Copious water rinse
Organic	Alcohol solutions	Rinse with solvent, Copious water rinse
Organic	Acidic solutions	Rinse with solvent, Copious water rinse
Organic	Basic solutions	Rinse with solvent, Dilute acid rinse, Copious water rinse
Fluorescence		Clean cells in Nitric Acid (5M) use a copious water rinse immediately before use

General Considerations:

Keeping cell clean while in use is the most important element of a long, useful Cell life. During the day, never let your cells dry out. If you keep them in a water or solvent bath between usage, the material that you are using will not have a chance to dry out and stick. Use only lens cleaning paper or fine cloth to wipe the optical surfaces, most paper products contain wood fibres which may scratch or damage the cell face or surface. At the end of the day, ensure all cells are well cleaned and store in a suitable container after drying.

Definitions

Dilute Acid	Dilute Hydrochloric acid (2M) or Nitric Acid (2M)
Acid	Hydrochloric (5M) acid or Nitric Acid (5M) (see note below)
Solvent rinse	Rinse with the solvent that solvated your sample in the first place!
Copious water rinse	Use a pure water like deionized, distilled or RO and rinse at least 10 times
Detergent	Use a neutral pH detergent if available but dilute acid wash and water rinse to remove detergent residues

Important Exceptions:

5M Nitric acid: Do not use this treatment on Anti-reflection or mirror coated cell's

Ultrasonic Cleaners:

We do not recommend the use of ultrasonic cleaning baths with cells. Each bath generates a different frequency and if your bath operates at the resonant frequency of a cell, the cell will break. We do not warranty that our cells for cleaning in an ultrasonic cleaner.

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