

SPE Video Notes

Solid Phase Extraction Video

Introduction

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Two key components to successful Solid Phase Extraction are:

1. Choosing the correct format
2. The four basic steps of SPE

Choosing the Right Format

Choosing the appropriate SPE format will be based on the analyte, matrix, volume, and concentration of your sample.

There are five basic formats:

1. The Straight Barrel or Syringe Barrel
2. LRC or Large Reservoir Capacity
3. Bond Elut Jr.
4. 96-well
5. Pipette Tip

The Four Basic Steps of SPE

There are four basic steps to every SPE method. These steps are:

1. Condition
2. Load
3. Wash
4. Elute

A simple way to remember these steps is CLWE-- pronounced "clue".

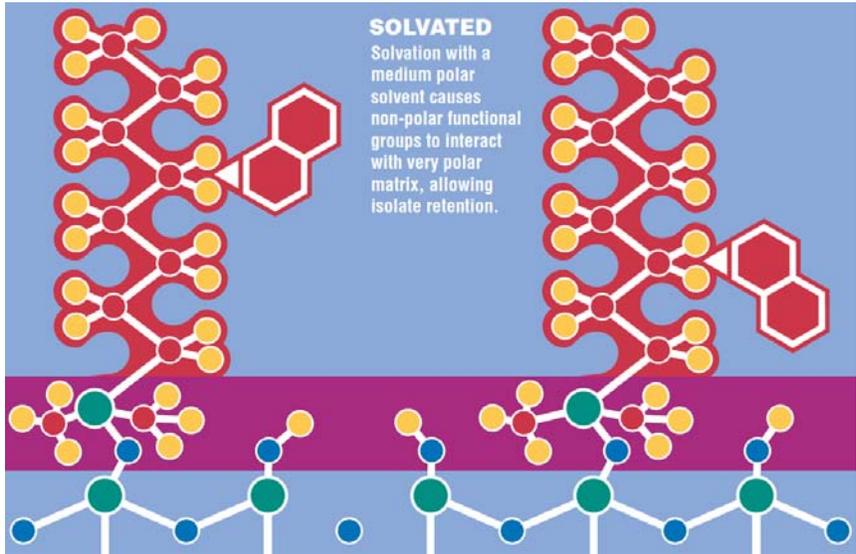
Conditioning

The "C" in CLWE represents "conditioning." Conditioning is critical to the success of your SPE method.

Conditioning is a two step process. For the material in the cartridge to be active and effective, it must be exposed to common solvents.

The SPE material must first be conditioned with an organic solvent.

Next, equilibrate with an aqueous solution.



The diagram to the left shows an example of solvated particles.

Loading

The “L” in CLWE stands for “loading”.

When considering loading, there are two important basics to remember:

- Be sure to understand the type of matrix associated with your compounds of interest
- Make sure you know the physical characteristics associated with your analyte.

Make sure to allow the sample to interact with the SPE sorbent as long as possible by employing proper loading flowrates.

Washing

The “W” in CLWE stands for “washing”.

This step refers to using a solvent or solution to wash interferences from the SPE material without removing the analytes of interest.

Elution

The “E” in CLWE stands for “elution.”

Elution refers to the solvent required to elute the compounds of interest from the SPE material.

It is not uncommon to employ the use of stronger or larger volumes of solvent.

Summary & Resources

Choosing the correct packing format of SPE material will be critical to the quality of your results.

“CLWE,” pronounced “clue,” stands for the four key steps in SPE: condition, load, wash, and elute.

If you have any additional questions, please visit us at www.agilent.com/chem/contactus.

Visit www.agilent.com/chem/SPEOptimization to view an overview of an SPE Optimization experiment. Learn how to optimize your SPE by following the steps and specifics noted in this presentation.