

Q-sep™ QuEChERS Products

Featured Products

Q-sep™ 3000 Centrifuge

- First centrifuge specifically designed for QuEChERS methodology.
- Compact, quiet, yet powerful unit spins at 3000g force required by the European method.

[Products](#)



QuEChERS Internal Standards and Quality Control Standards

- Single and multiple component standards as specified in EN Method 15662.
- Support for GC and HPLC with MS, MS/MS, and selective detectors.
- Ready to use for QuEChERS extractions—no dilutions necessary.

[Products](#)



Q-sep™ QuEChERS Tubes For Extraction and Clean-Up of Pesticide Residues From Food

Products

- Fast, simple sample extraction and cleanup using dSPE.
- Fourfold increases in sample throughput.
- Fourfold decreases in material cost.
- Convenient, ready to use centrifuge tubes with ultra pure, preweighed adsorbent mixes.

[Products](#)



QuEChERS Approach

Prepare samples more quickly, easily, and cost-effectively with QuEChERS.

	Mini-Luke or Modified Luke Method	QuEChERS	Savings with QuEChERS
Estimated time to process 6 samples (min.)	120	30	4x faster
Solvent used (mL)	60-90	10	6-9x less solvent
Chlorinated waste (mL)	20-30	0	Safer, cheaper, greener
Glassware/Specialized equipment	capacity for 200mL, quartz wool, funnel, water bath or evaporator	none	Ready-to-use

Quick, Easy, Cheap, Effective, Rugged, and Safe, the QuEChERS ("catchers") method is based on work done and published by the US Department of Agriculture Eastern Regional Research Center in Wyndmoor, PA.(1) Researchers there were looking for a simple, effective, and inexpensive way



to extract and clean pesticide residues from the many varied sample matrices with which they routinely worked. They had been using the Modified Luke Extraction Method, which is highly effective and rugged, but is both labor and glassware intensive, leading to a relatively high cost per sample. Solid phase extraction also had been effective, but the complex matrices the investigators were dealing with required multiple individual cartridges and packings to remove the many classes of interferences, adding costs and complexity to the process. A new method would have to remove sugars, lipids, organic acids, sterols, proteins, pigments and excess water, any of which often are present, but still be easy to use and inexpensive.



The researchers developed a simple two-step procedure. First, the homogenized samples are extracted and partitioned, using an organic solvent and salt solution. Then, the supernatant is further extracted and cleaned, using a dispersive SPE technique. Multiple adsorbents are placed in a centrifuge tube, along with the 1mL of organic solvent and the extracted residues partitioned from step 1. The contents are thoroughly mixed, then centrifuged, producing a clean extract ready for a variety of GC or HPLC analytical techniques.(2) Validation and proficiency data for the QuEChERS method are available for a wide variety of pesticides in several common food matrices at www.quechers.com

Using the dispersive SPE approach, the quantity and type of adsorbents can be easily adjusted for differing matrix interferences and "difficult" analytes. Results from this approach have been verified and modified at several USDA and Food and Drug Administration labs, and the method now is widely accepted for many types of pesticide residue samples.

Restek Q-sep™ products make the QuEChERS approach even simpler. Extraction salts are preweighed and provided with 50mL centrifuge tubes. The dSPE centrifuge tubes, available in 2mL and 15mL sizes, contain magnesium sulfate (to partition water from organic solvent) and PSA* adsorbent (to remove sugars and fatty acids), with or without graphitized carbon black (to remove pigments and sterols) or C18 (to remove nonpolar interferences). Custom products are available by quote request. If you are frustrated by the time and cost involved with your current approach to pesticide sample extraction and cleanup, we suggest you try this simple and economical new method.



We have products compliant with AOAC, Multi-miniresidue and European methods.

[Click here for our complete Q-sep™ QuEChERS product listing.](#)

Did You Know?

Multiple sorbents are used to remove different types of interferences.

MgSO₄—removes excess water

PSA*—removes sugars, fatty acids, organic acids, and anthocyanine pigments

C18—removes nonpolar interferences

Carbon—removes pigments, sterols, and nonpolar interferences

*PSA—primary and secondary amine exchange material.

References

1. Anastassiades, M., S.J. Lehotay, D. Stajnbaher, F.J. Schenck, *Fast and Easy Multiresidue Method Employing Acetonitrile Extraction/Partitioning and "Dispersive Solid-Phase Extraction" for the Determination of Pesticide Residues in Produce*, J AOAC International, 2003, vol 86 no 22, pp 412-431.
2. Schenck, F.J., *SPE Cleanup and the Analysis of PPB Levels of Pesticides in Fruits and Vegetables*. Florida Pesticide Residue Workshop, 2002.