



# Original QuEChERS method for pesticides in foods

**Author**

Thermo Fisher Scientific

**Keywords**

QuEChERS, Multi-residue methods, Pesticides, HyperSep, SPE

**Introduction**

QuEChERS dispersive SPE products provide a Quick, Easy, Cheap, Effective, Rugged and Safe (QuEChERS) sample preparation technique for multi-residue pesticide analysis. QuEChERS methods overcome problems associated with time consuming, expensive and labor intensive multi-residue methods (MRM). QuEChERS is a fast and easy sample preparation method with a robust process and high recovery and reproducibility.

QuEChERS products are available with many different sorbent combinations and should be selected based on the sample matrix. Short protocol “AB21891: Selecting the Appropriate QuEChERS Extraction Method for Pesticides in Foods” can be used to determine the appropriate material and methods for individual applications.

## Important notes

- The original QuEChERS method described herein is best applied to acid-sensitive pesticides including Acephate, Acrinathrin, Carbaryl, Chlorothalonil, Diclorvos, Dimethoate, Mevinphos, Phosmet, and Pymetrozine.
- The addition of sample to QuEChERS extraction tube containing sorbent causes an exothermic reaction between the magnesium sulfate and the water in the sample. Excess heat can be minimized by adding the sample to the tube, then the solvents, then the sorbent materials.
- The sample must be in the appropriate homogenization state prior to extraction and cleanup for good recovery. The sample should be hydrated to 80% or higher and in the appropriate homogenization state.

## Materials required

- Thermo Scientific™ HyperSep™ Dispersive SPE Pre-Packed Extraction tubes
- HyperSep Dispersive SPE Clean-Up tubes
- Acetonitrile, 15 mL/sample
- Surrogate and internal standard
- Centrifuge and rotor for the tubes used, minimum 3700 RPM

## Protocol

1. Weigh 15 g of homogenized (hydrated at least 80%) sample in 50 mL centrifuge tube
2. Add 15 mL acetonitrile and surrogate
3. Shake briefly
4. Add pre-measured QuEChERS extraction sorbent materials
5. Shake by hand for 1 minute
6. Centrifuge at 5000 rpm for 5 minutes
7. Transfer a portion of supernatant to a QuEChERS clean up tube
8. Shake for 30 seconds
9. Centrifuge for 1 minute at 6000 rpm
10. Transfer 0.5 mL aliquot for analysis

Current versions of product instructions are available at [separatedbyexperience.com/chromexpert](https://separatedbyexperience.com/chromexpert)

See all HyperSep dispersive SPE extraction and clean-up products at [thermofisher.com/QuEChERS](https://thermofisher.com/QuEChERS)

**ThermoFisher**  
S C I E N T I F I C