

*High Throughput, Consistent, Reproducible  
Results for Analysis in Food*



**FMS**  
Fluid Management Systems

**PLE<sup>®</sup>**

*Fast, Automated Pressurized Liquid Extraction*

# Fast, Automated Extraction

Integrated Sample Extraction and Cleanup ready for the Analysis of Pesticides in Food



A single module PLE sending the extract directly to a SuperVap® Concentrator

- *One extraction method for all matrices*
- *High Speed*
- *Modular and expandable from 1 to 8*
- *Process 1 to 8 samples in 10 to 15 min*
- *Extraction cell size 5 to 100 ml*
- *Real time plot of temperature and pressure*
- *Reduced Solvent Consumption*
- *Works efficiently on all Sample Matrices*
- *Lower Energy Consumption*
- *InCell Sample Cleanup*



The PLE is modular and expandable. An example of a PLE 4 module system for extracting 4 samples simultaneously. The PLE can be expanded up to 8 modules for extracting up to 8 samples in parallel.

# Consistent, Reproducible Results

The PLE system is a high-speed pressurized liquid extraction system designed to perform sample extraction of multiple samples for the analysis of pesticides in food matrices. The PLE system delivers high recoveries and excellent precision for all analytes in minutes instead of hours. Inexpensive stainless steel extraction cells with end cap filtration keep operational costs at a minimum. Reusable end cap filtration increases productivity and saves valuable time. Combining InCell cleanup removes extra manual cleanup steps required by other techniques increasing throughput while reducing human error.

## **Modular, Expandable and Affordable from 1 to 8 modules**

The modular design of the PLE system allows you to purchase a one, two up to eight sample system to fit your budget. The system can be expanded from a one to eight sample system as your work load grows.

## **Reduce Solvent Waste**

The PLE system reduces solvent waste by using solvents more efficiently. Cut solvent consumption in half.

## **Increase Productivity**

The entire extraction and cleanup is performed in minutes. Traditional methods can take hours.

## **Reduce Operating Costs**

Rapid extraction and clean-up, along with reduced solvent use and waste, reduces operating costs by as much as 70 percent.

## **5 to 100 mL Extraction Cell Sizes**

The PLE system offers 5-100 mL low cost stainless steel extraction cells with Teflon endcap filtration. This wide range of extraction cell volumes allows

the use of the same unit for all sample sizes, even in the same run.

## **Eliminate cross contamination**

Low-cost stainless steel extraction cells and Teflon filtration endcaps ensure trouble-free extraction and eliminate the risk of cross contamination.

## **Sample Extraction and Cleanup in one step**

The PLE uses incell cleanup and performs the entire sample extraction and cleanup in one step with increased speed and reduced cost. Eliminating additional manual cleanup steps. Just inject the sample extract.

## **Automatic Operation and Documentation**

Real-time software allows eight channels of pressure and eight channels of temperature data to be plotted simultaneously. Allows automatic documentation of all extraction data.

## **One Extraction Method for All Matrices**

A single extraction and cleanup method is used for all Pesticide extractions for all sample types. Eliminating the need to develop and validate several extraction protocols.

# Workflow Comparison

## QUECHERS EXTRACTION OF PESTICIDES WORKFLOW



**2 MINUTES**

Weigh the Sample



**5 MINUTES**

Load the Sample into the Vessel add H<sub>2</sub>O and Acidified ACN



**30 MINUTES**

Shake Vessel



**10 MINUTES**

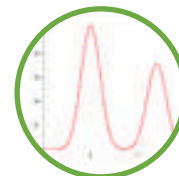
Add Quechers salt, shake and centrifuge



**10 MINUTES**

Extract Filtration

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**52 MINUTES**

Sample Prep Total Time Ready for Injection

## PLE EXTRACTION AND INCELL CLEANUP FOR PESTICIDES WORKFLOW



**2 MINUTES**

Weigh the Sample



**2 MINUTES**

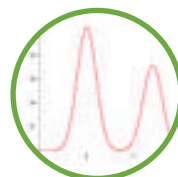
Load the XtractClean™ and Sample into the Extraction Cell



**6 MINUTES**

Pesticide Extraction and In Cell Cleanup

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**10 MINUTES**

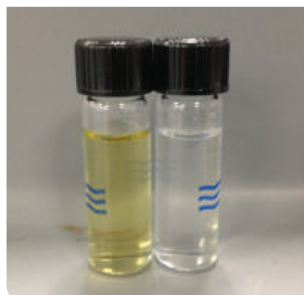
Sample Prep Total Time Ready for Injection

### ECONOMICAL EXTRACTION CELLS



5ml to 200ml

### EXTRACTION AFTER INCELL CLEANUP



### "DIRECT-TO-VIAL CONCENTRATION"

The SuperVap-12 standalone direct-to-vial evaporation/concentration system is the ideal solution for performing the final evaporation and concentration step. SuperVap® evaporates the extracts and delivers final extracts in GC vials ready for GC/MS analysis.



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