



PreeKem EXTRA

AUTOMATED SOLID PHASE EXTRACTION SYSTEM

FROM SCRATCH
START SAMPLE PREPARATION
INTELLIGENT ERA



PreeKem Scientific Instruments Co., Ltd.



Tel: 021-54427296 54426316 54426318
Fax: 021-54427063



Address: No.100-101 Building, No.2338 Duhui Road, Shanghai, 201108, China



E_mail: info@preekem.com
Website: www.preekem.com

Statement: Specification may change without notice. PreeKem reserves rights of final explanation.
Version: 2st edition, 2017.4

EXTRA INTRODUCTION

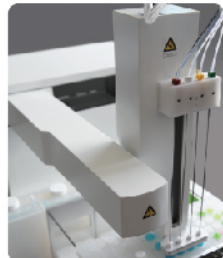
EXTRA is widely used in applications such as environmental, agricultural, clinical, and food, where large number of samples are analyzed on a daily bases.

Weight: 70kg

MAIN FEATURES

1 High precision dual-helix control robotic arm

Precise 3-dimensional positioning of probes for liquid transporting. Unique metal and plastic sealing to ensure superb protection of the hardware from various organic solvents.



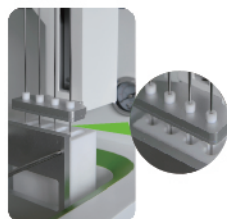
2 High quality syringe pump and valve

The high performance syringe pump and ceramic valve effectively minimize the dead volume which causes cross-contamination.



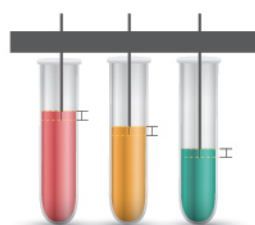
3 Thorough washing of needle probe

Various solvents can be selected to immerse and rinse the inner and outer surface of the probe.



4 Patented liquid level tracing

The depth of needle probe automatically adjusted with the change of the liquid depth. Real-time pressure reading on the probe tip ensures safe stop as soon as the bottom of vessel is reached.



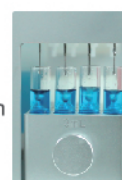
5 Intelligent pressure protection mechanism

The pressure of SPE column is monitored in real-time and the pump stops to protect the run upon detection of over-pressure.



6 Drying and evaporation

Electromagnetic solenoid valve is connected to an external gas source for drying the column and concentrate the filtrates collected.

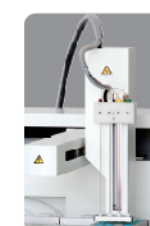


7 Intelligent waste collection

Aqueous and organic wastes are collected separately to facilitate proper waste disposal

8 Sample loading loop

Samples are loaded quantitatively to the sampling loop to keep injected liquid from pump and valve, effectively extending the lifetime of sample injection hardware.



9 Multi-solvent handling

Syringe pump supplies up to 7 types of solvents (>1L each) while the needle probe can load up to 4 types of solvents.

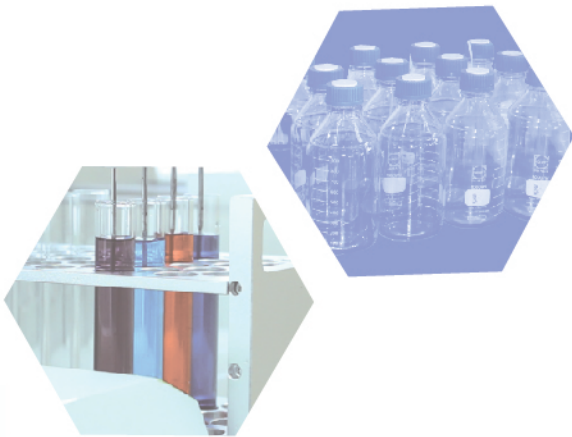


EXTRA

APPLICATION HIGHLIGHTS

Ability to handle high volume large size water samples

- 1
- High-performance syringe pump and multi-way selective valve to enable handling of 24 large-size water samples in a single batch.
- 2
- Automated sample loading, injection pump cleaning, replacing SPE columns and collecting vessels, and nitrogen evaporation.
- 3
- Able to choose from up to 5 solvents with reservoir size no less than 500 mL.



EXTRA

SOFTWARE

A smart, user-friendly interface

Start upon scheduling

Scheduling function provides great flexibility and efficiency to time management. Experiments will start on appointed time.

Robot arm warning function

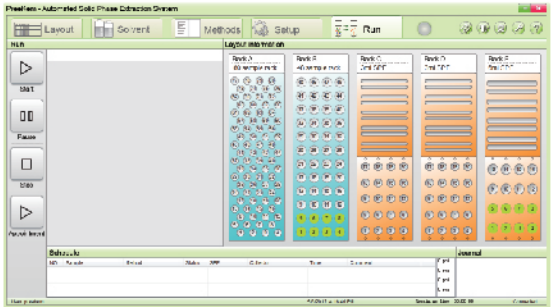
Robotic arm automatically stops as soon as a malpositioned sample rack or SPE rack is detected .

Sample reclaim

EXTRA could re-collect samples accidentally injected into the sample loop.

Other features

- Solvent monitoring
- Real-time pressure monitoring and alarm
- Online adding sample function
- Sample dilution
- Work log sample refill
-



EXTRA

SOLUTIONS

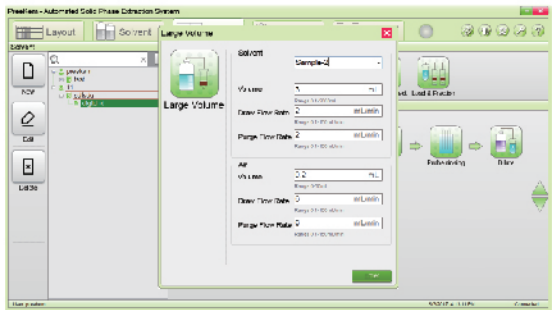
CASE1: Automated SPE-GC-MS for Hexachlorocyclohexane (HCH) determination in sea water

Method

Filter 1 liter of sea water with glass fiber paper. Add 5mL of methanol afterwards. Load treated sample on EXTRA and proceed with SPE.

Results

Four derivatives of HCH (alpha, beta, gama, delta) examined showed excellent linearity in the range of 0.01-0.1 ug/mL (ppm), and the recoveries were found to be in 95.3%-98.0%. This method is validated for large-size sea water analysis.



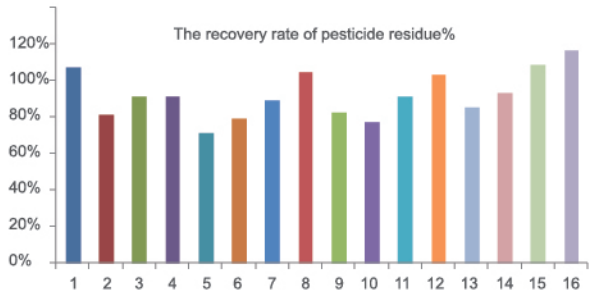
CASE2: Automated SPE-GC-MS for determination of various pesticides in cereal

Method

Weigh 2.0 g of rice and soak in 6mL of water for 20 min. Add 5 g of NaCL and 5 g of Na₂SO₄ to mix well. Add 20 mL of Acetonitrile to the mixture, mix well, and centrifuge for 5 minutes. Extract supernatant and repeat the same extraction with another aliquote of 20 mL Acetonitrile. Combine two portions of supernatant and reduce the volume to 5 mL by evaporation. The concentrated liquid proceeds to SPE and followed by GC-MS analysis.

Results

16 pesticides were quantitatively extracted from the method proposed and the recoveries are in the range of 71%-116%. This method was validated for determination of pesticides in cereal samples.



- 1-phenothoate
- 2-dichlorvos
- 3-chlorpyrifos
- 4-cyfluthrin
- 5-lpratropium
- 6-pirimiphos-methyl
- 7-fenpropathrin
- 8-carbofuran
- 9-dimethoate
- 10-bifenthrin
- 11-endosulfan
- 12-carbofos
- 13-pyrimethanil
- 14-buprofezin
- 15-ketotriazole
- 16-methidathion

Typical applications

- Pesticides in agricultural products
- Pesticides in grain and oil seeds
- Veterinary drug residuals in meat products
-
- Additives in food
- Drug metabolomic products and toxins in blood and urine
- SVOCs in water samples