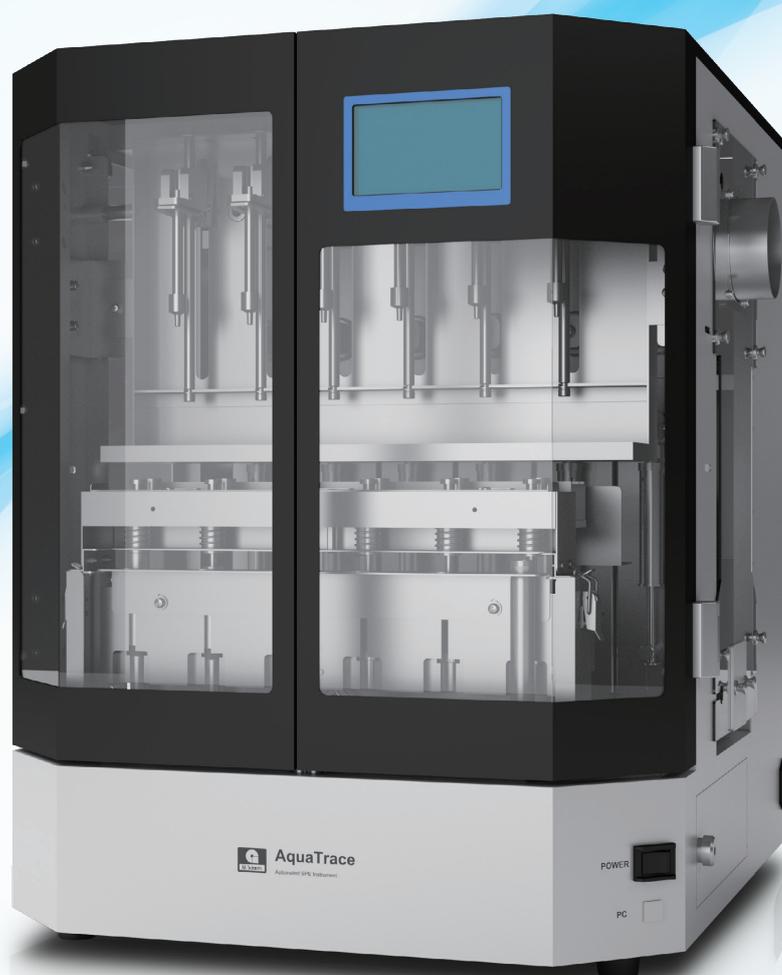
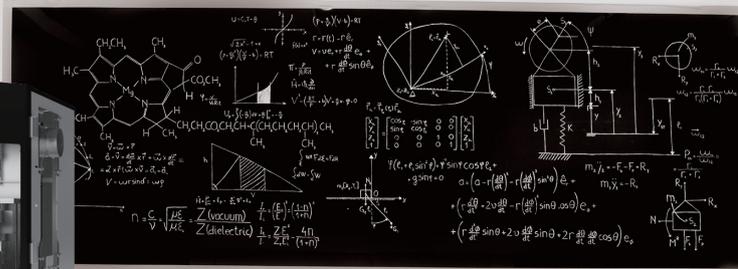


 Fully Automatic Solid Phase Extraction System for Water Analysis

# AquaTrace ASPE899





# Compact design, high performance

With its advanced, fully automatic specification, the AquaTrace ASPE899 Solid Phase Extraction(SPE) system packs high performance into a compact design.

# AquaTrace ASPE899

Since founded GL Sciences in 1968, as a specialist manufacturer of chromatography product, we have provided our customers with various products related to analysis. Our SPE products, which we began rolling out in 1990s, have become popular because of the improved analytical techniques they embody. As mean of sample preparation, they have become indispensable in a variety of fields. The AquaTrace ASPE899's fully automatic SPE system combines high performance and accuracy with the ease of use that analysts value. The precise, efficient analysis achieved by the AquaTrace's automation will revolutionize your lab.

# Comprehensive Solid Phase Extraction knowhow

Full automatic

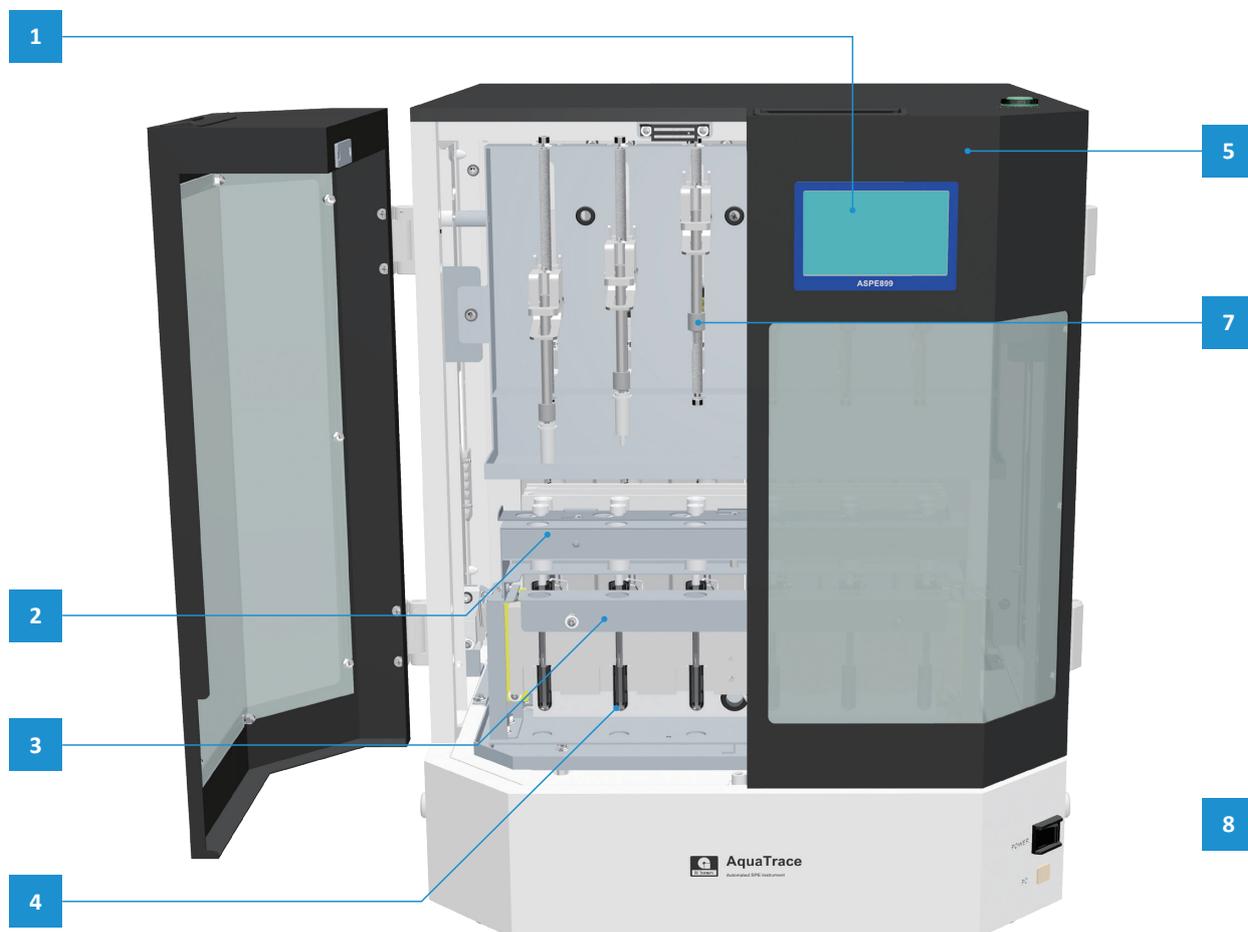
Solid Phase Extraction (SPE) is now a fully automated process. This saves the analyst from having to perform tedious routine tasks and helps streamline lab work.

Easy to operate

Operability is completely intuitive with full visual control thanks to the LCD touchscreen graphical user interface.

High accurate

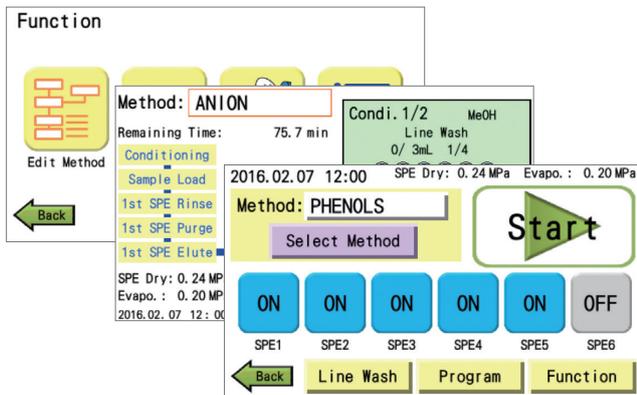
The high-precision pump and switching valve control the flow rate exactly for accurate SPE.



\*:Optional

## 1 Color LCD touchscreen

The AquaTrace's color LCD touchscreen allows complicated solid-phase extraction to be carried out with ease and without any specialized knowledge. The extraction procedure is displayed on screen and is controllable via an intuitive graphical user interface that allows easy setting of the various parameters.



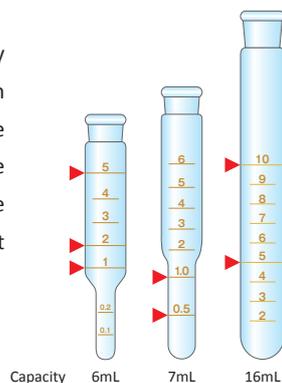
## 2 Excellent Dehydration Performance

The SPE cartridge is dehydrated extremely efficiently by simultaneously purging it with nitrogen and applying suction.

## 3 Graduated Concentrator Tube

Concentrating the elute is easily performed, allowing for collection in a GL-SPE concentrating tube with a graduation mark. The tubes with a maximum volume of 16 mL can be used without concentration of solvent.

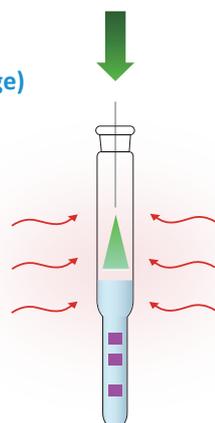
► : Graduation



## 4 Evaporation (Heating + Nitrogen purge)

The eluent is purged by nitrogen and can be concentrated by heating it in AquaTrace aluminum thermal blocks.

■ : Analyte



## 5 Customizable SPE Method

The SPE method can be freely customized, and up to 120 custom methods can be saved in the system.

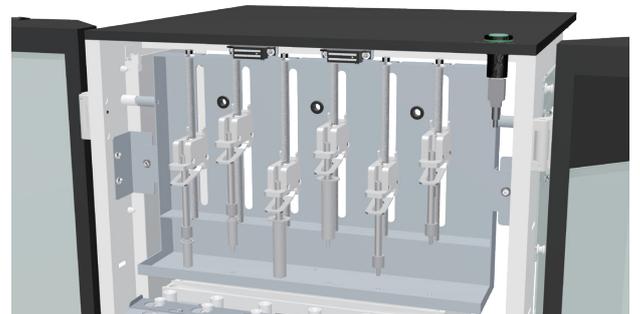
- Pesticides
- PFAS
- Phenols
- 1,4-Dioxane
- Geosmin, 2-Methylisoborneol

## 6 Low Carry-over

Because the sample line can be washed with an organic solvent, carryover is low.

## 7 Compatible with a wide range of SPE cartridges

SPE cartridges with either syringe-barrel or Luer connectors can be easily attached and detached.



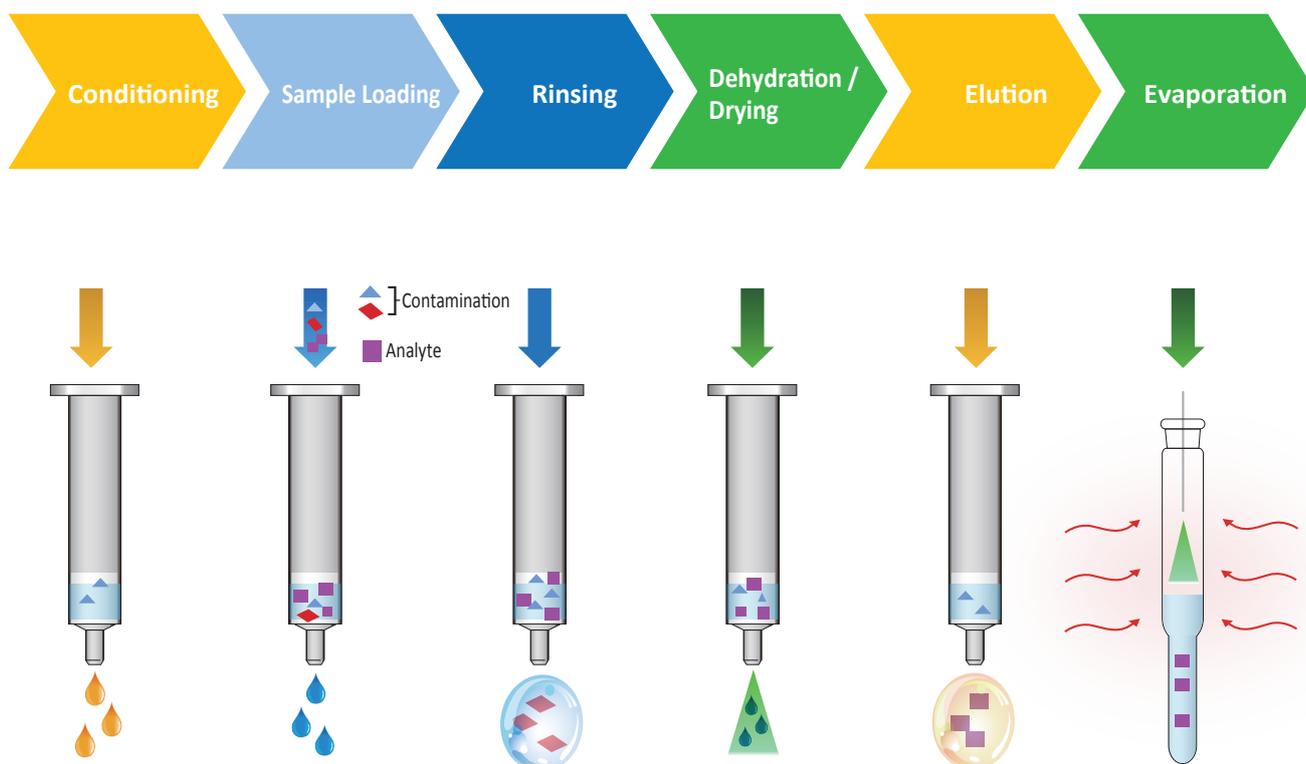
## 8 Nitrogen Generator (optional)

Nitrogen can be supplied by our optional NM9100 nitrogen generator. This works in conjunction with the AquaTrace to automatically stop the nitrogen supply as soon as the AquaTrace completes operation.



# Maximizes accuracy by automating all processes

By automatically handling the time-consuming, labor-intensive tasks involved in water quality inspection, the AquaTrace boosts productivity. Tasks that normally require a skilled operator are taken care of by the apparatus, resulting in highly accurate analysis results.

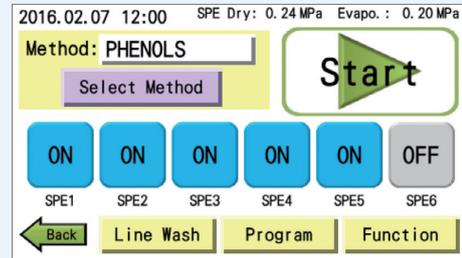


**AquaTrace carries out all of these steps automatically.**

# User-friendly operation

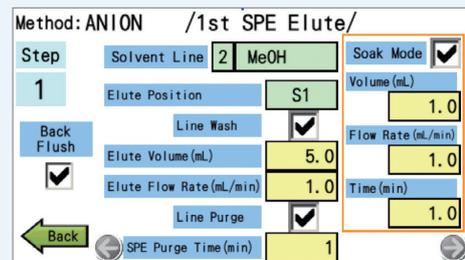
## Quick start

After prepping the AquaTrace with, for instance, the sample, solvent, and SPE cartridge, you can start operation simply by selecting the method and pressing the start button. Choosing which line to use is easy, and there a timer function to specify when to begin and end operation.



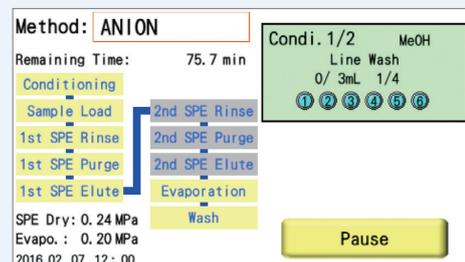
## Method edit

The entire SPE procedure is displayed on a single screen, and the extraction parameters can be easily edited and saved. You can also see what the total operating time be as you modify each parameter.



## At-a-glance status indication

AquaTrace displays its progress in real time so you can easily check the current process status. For instance, it's possible to see how much time remains until the end of extraction.

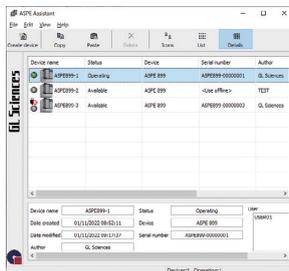


# Smarter, more convenient functionality

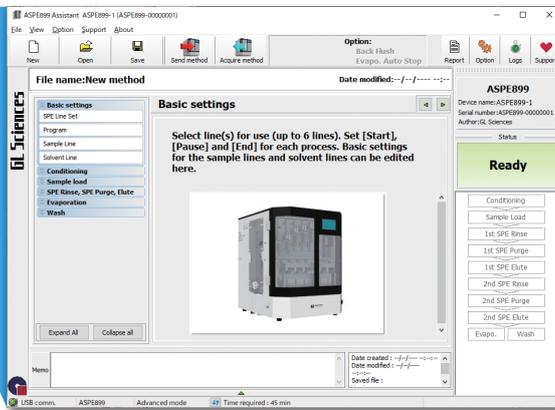
## Method editing software ASPE899 Assistant

ASPE899 Assistant is a dedicated application that lets you edit methods using your PC for greater ease of use.

### Initial screen / Device selection screen



Device selection screen

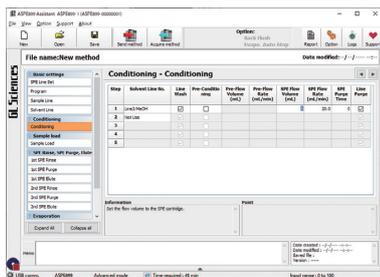


Initial screen

Lets you create methods, manage reports and logs , and check maintenance methods. With the PC connected to the AquaTrace, you can check the status, upload and download methods, automatically acquire logs, and use the mail function.

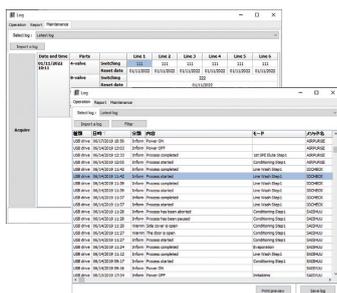
Note: A PC and an Internet connection are required.

### Method edit screen



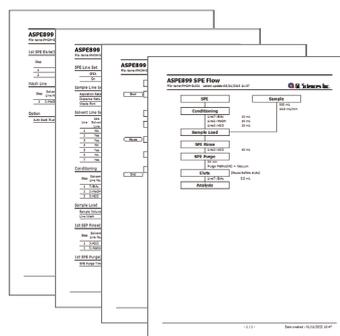
You can select any process of the SPE method and edit its item. To help you, explanations and setting points are displayed. In addition, a method used in the conventional model ASPE799 can be automatically converted for use in the ASPE899.

### Log screen



Lets you check the device's operation history and maintenance record.

### Report function



The flow diagram for the method is automatically created and included in a report together with the AquaTrace settings and processes. You can type in notes such as the type of SPE cartridge used, lot No., and water sampling location and add them to the report. The report can be printed or saved as a PDF document.

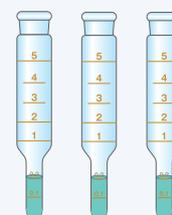
## Nitrogen Generator NM9100

The NM9100 is a system for supplying high-purity nitrogen gas.



## Solvent level sensor

When the elution solvent is being concentrated, the sensor detects the liquid level and automatically stops the nitrogen purging to prevent dryness.



## Specification

### ● AquaTrace ASPE899

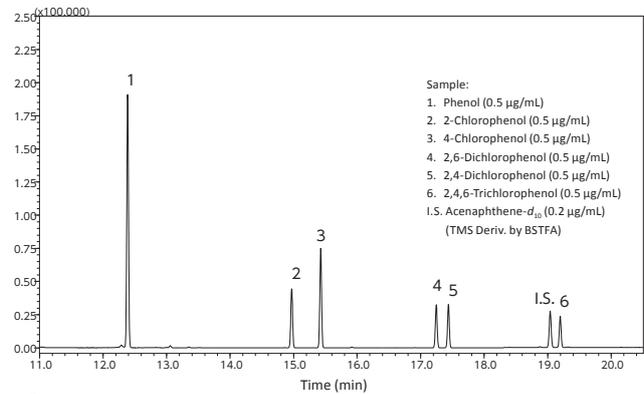
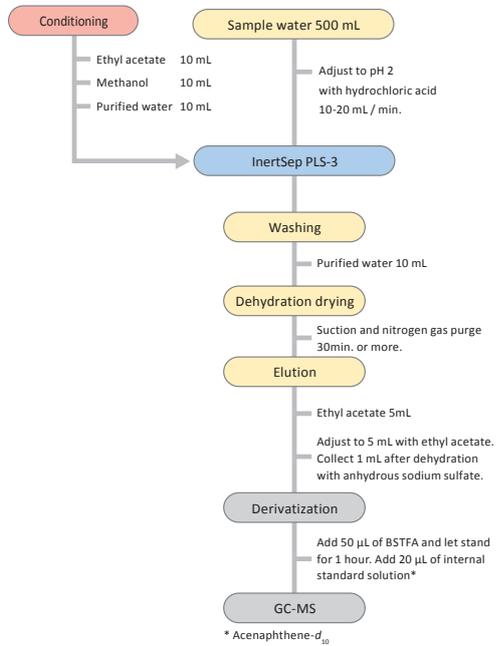
Solvent delivery method	Syringe pump
No. of Sample processed at the same time	6
Operation unit	LCD touch panel
No. of solvent sets	7
Test tube (can be concentrated)	GL-SPE concentrator 6 mL, 7 mL GL-SPE concentrator 10 mL (optional)
Test tube (cannot be concentrated)	Max. 16 mL
No. of savable methods	120 (Main unit) / 120 (USB memory)
PC connection	Possible
SPE cartridge size	Luer device type (Standard) Syringe barrel type 6mL
External input / output	NM9100 (Ready input, Stop output) / Operation end / Error external output
Sample water flow volume setting range	10 - 99990 mL
Dehydration method	Select from suction + nitrogen purge / suction / nitrogen purge
Concentration method	Select from aluminum heat block + nitrogen purge or nitrogen purge
Sample flow rate	0.5-100 mL/min
Solvent level sensor	Yes (optional)
Log function	Power On / Off, Error, Start, Stop, Method used
Size	480 (W) × 560 (D) × 615 (H) mm (exclude protrusions, include rubber feet)
Weight (standard specification)	About 56 kg
Power requirements	AC 110/115/120/200/220/240 V±10%, 50/60 Hz, 220 VA

### ● Nitrogen Generator NM9100

Nitrogen generation method	Pressure Swing Adsorption
Normal flow rate (pressure) range	2 L/min (350 kPa) to 10 L/min (250 kPa)
Nitrogen generation and purity	4 L/min (99.9%) to 8 L/min (99%)
Pressure adjustment	With pressure regulator and pressure gauge
Flow control	Needle valve
N <sub>2</sub> Gas outlet pipe diameter	1/4 Swagelok (SUS)
Size	275 (W) × 607 (D) × 565 (H) mm (When caster mounted. Excluding protrusions)
weight	About 50 kg
Power requirements	AC100 V±10%, 50/60 Hz, 600 VA

# Application

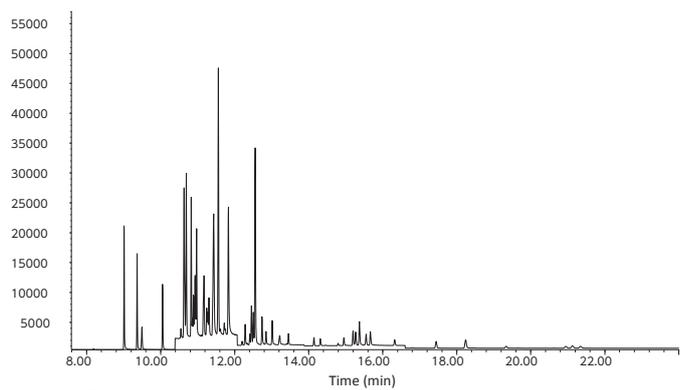
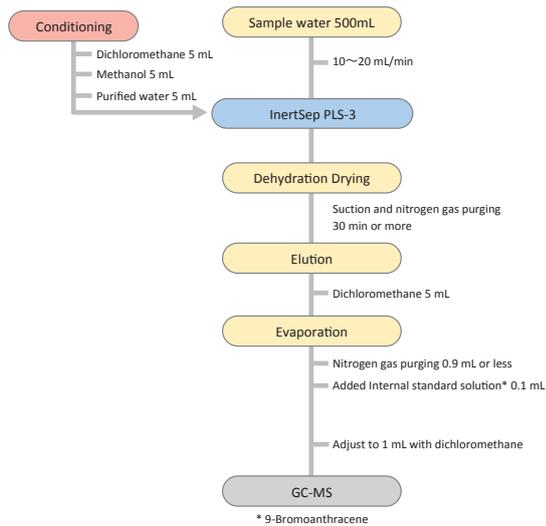
## Phenols SPE-GC/MS



**Conditions**

System : GC-MS  
 Column : InertCap 1MS  
 0.25 mm ID  $\times$  30 m df = 1.0  $\mu$ m  
 Col. Temp. : 50 °C (2 min hold) - 10 °C / min - 280 °C (5 min hold)  
 Carrier Gas : He 36.0 cm/sec  
 Injection : Splitless 1 min  
 250 °C  
 Detection : MS SIM  
 Interface Temp. 280 °C  
 Sample Size : Analyte in Ethyl acetate  
 Injection Vol. : 1  $\mu$ L

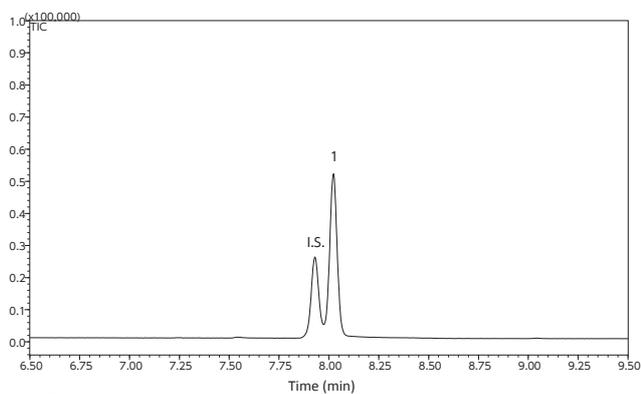
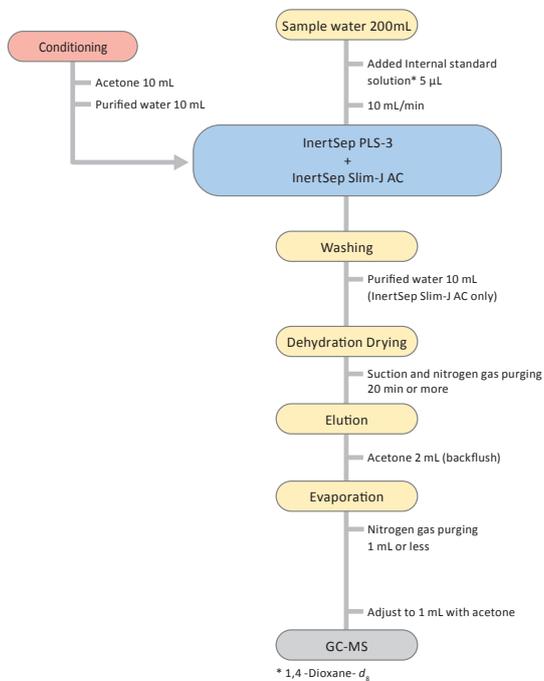
## Pesticides SPE-GC/MS



**Conditions**

System : GC-MS  
 Column : InertCap 5 MS/NP  
 0.25 mm I.D.  $\times$  30 m df = 0.25  $\mu$ m  
 Col.Temp. : 50 °C (1 min hold) - 20 °C/min - 210 °C - 10 °C/min - 270 °C (8 min hold)  
 Carrier Gas : He 1.6 mL/min  
 Injection : Pulsed Splitless (250 kPa until 0.75 min) 1 min  
 250 °C  
 Detection : MS SIM  
 Interface Temp. 280 °C  
 Sample Size : 0.1  $\mu$ g/mL in Dichloromethane  
 Injection Vol. : 2  $\mu$ L

# 1,4-Dioxane SPE-GC/MS method



## Conditions

System : GC-MS  
 Column : InertCap 1 MS  
 0.25 mm i.d. x 30 m df = 1.00 µm  
 Col.Temp. : 40 °C (5 min hold) - 10 °C/min - 200 °C (5 min hold)  
 Carrier Gas : He 36.0 cm/sec  
 Injection : Pulsed Splitless (150 kPa until 1.5 min) 1 min  
 250 °C  
 Detection : MS SIM  
 Interface Temp. 250 °C  
 Sample Size : Analyte in Acetone  
 Injection Vol. : 1 µL

Sample : 1. 1,4-Dioxane (1.0 µg/mL)  
 I.S. 1,4-Dioxane- $d_8$  (0.5 µg/mL)

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