GL Sciences

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Fully Automatied Solid Phase Extraction System for Water Analysis

AquaTrace

ASPE900

Compact Design, High Performance

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

AquaTrace

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. AquaTrace ASPE900 a fully automatic SPE system designed for enrich and extraction of organic compounds present in high-volume aqueous samples, 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.


Certificate JP08/012187
SGS
GL Sciences Inc.
ISO 9001:2015
L. Moran
IAF


Certificate JP04/000512
SGS
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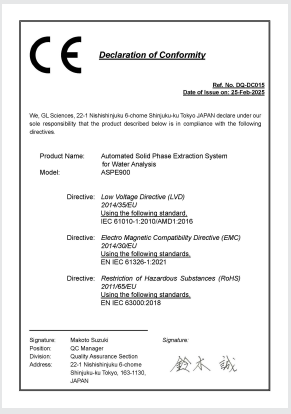
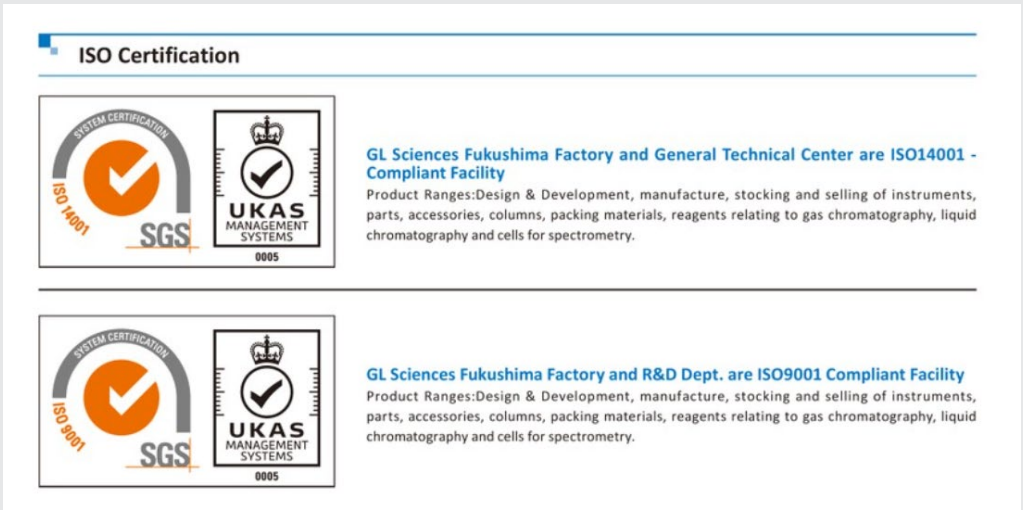

CE
Declaration of Conformity
Ref. No. DQ-DC015
Date of Issue on: 25-Feb-2025
We, GL Sciences, 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo JAPAN declare under our sole responsibility that the product described below is in compliance with the following directives.
Product Name: Automated Solid Phase Extraction System for Water Analysis
Model: ASPE900
Directive: Low Voltage Directive (LVD) 2014/35/EU
Using the following standard.
IEC 61010-1:2010/AMD1:2016
Directive: Electro Magnetic Compatibility Directive (EMC) 2014/30/EU
Using the following standards.
EN IEC 61326-1:2021
Directive: Restriction of Hazardous Substances (RoHS) 2011/65/EU
Using the following standards.
EN IEC 63000:2018
Signature: Makoto Suzuki
Position: QC Manager
Division: Quality Assurance Section
Address: 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo, 163-1130, JAPAN
Signature:



Comprehensive Solid Phase Extraction Knowhow

Full automatic

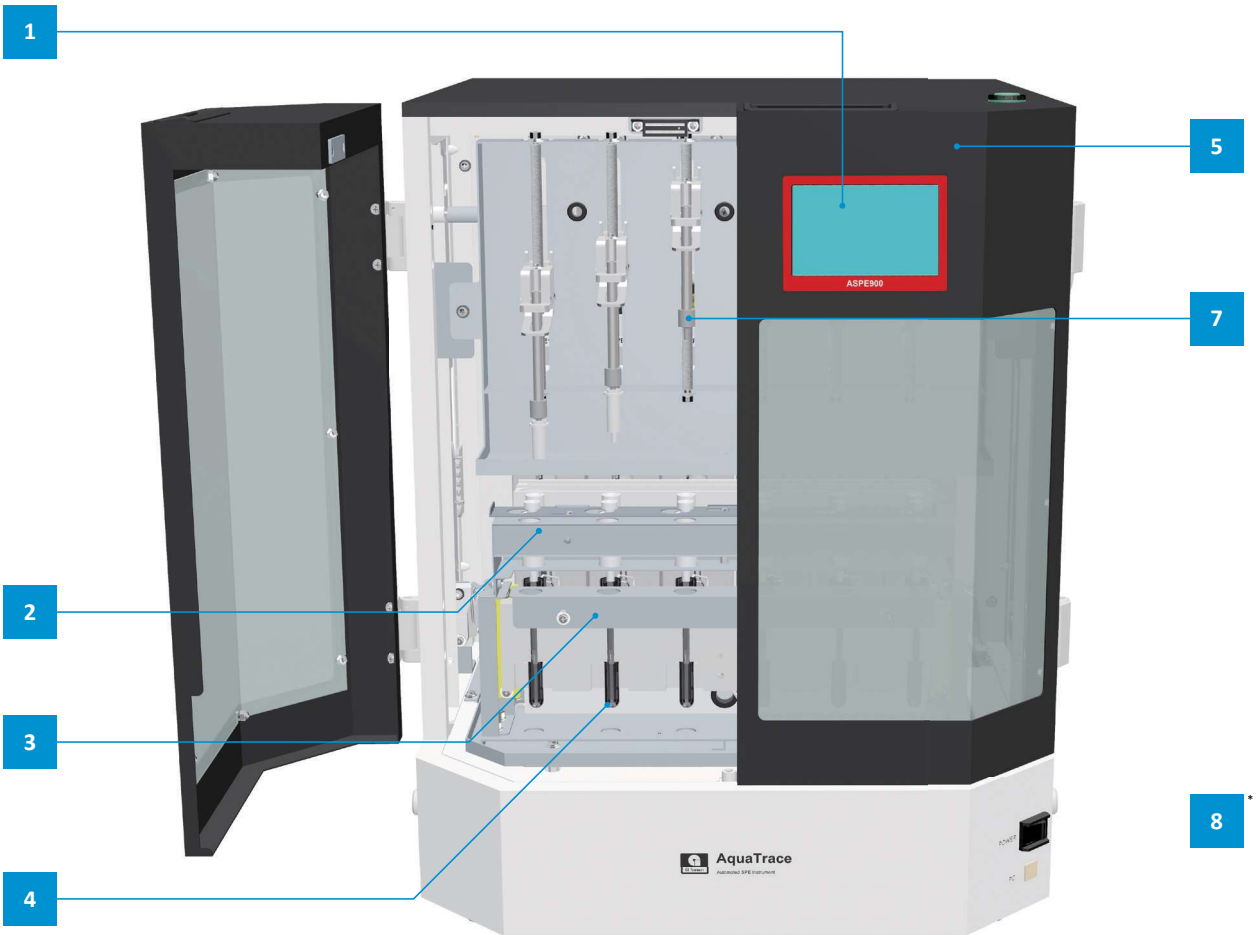
Solid Phase Extraction (SPE) is now a fully automated process. This saves the analyst from having to perform tedious routine tasks and helps streamline lab work.

Easy to operate

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

High accurate

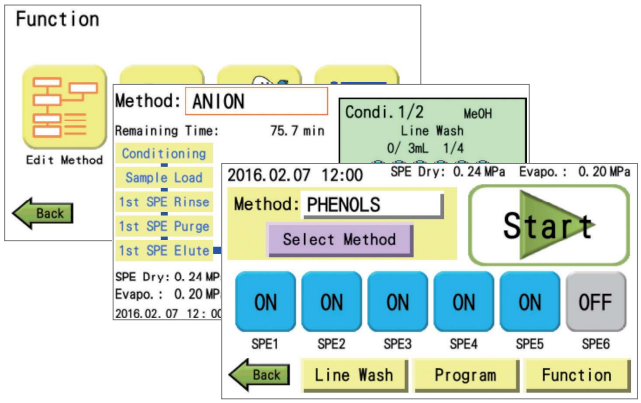
The high-precision pump and switching valve control the flow rate exactly for accurate SPE.



*: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.



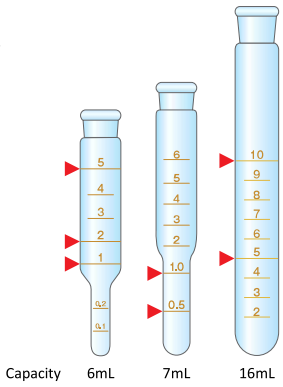
2 Excellent Dehydration Performance

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

3 Graduated Concentration 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 .

▶ : Gradiation



4 Available with Various Solvents

During automatic performance from conditioning, washing, cartridge drying, loading, collecting and concentration process, all solvents used in the process are able to be used in the system. The solvents can be n-heptane, diethyl ether, methanol, acetonitrile、h-hexane, acetone, dichloromethane and etc.

5 Customizable SPE Method

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

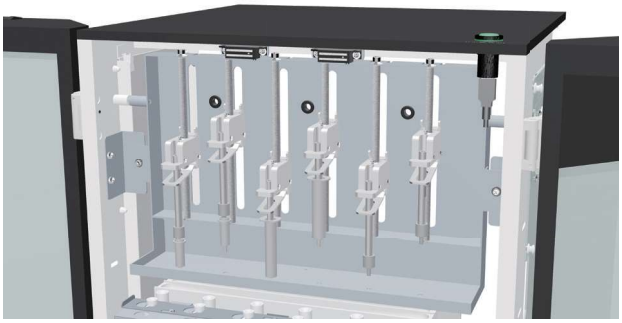
- Pesticides
- PFAS
- Phenols
- 1,4-Dioxane
- Geosmin, 2-Methylisoborneol

6 Low Carry-over

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

7 Compatible with a wide range of SPE cartridges

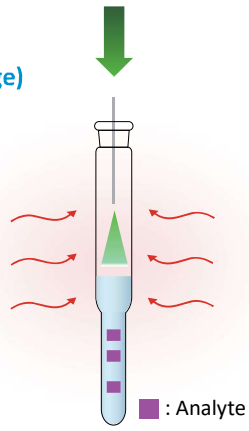
SPE cartridges with either syringe-barrel or Luer connectors can be easily attached and detached.



8 Evaporation (Heating + Nitrogen purge)

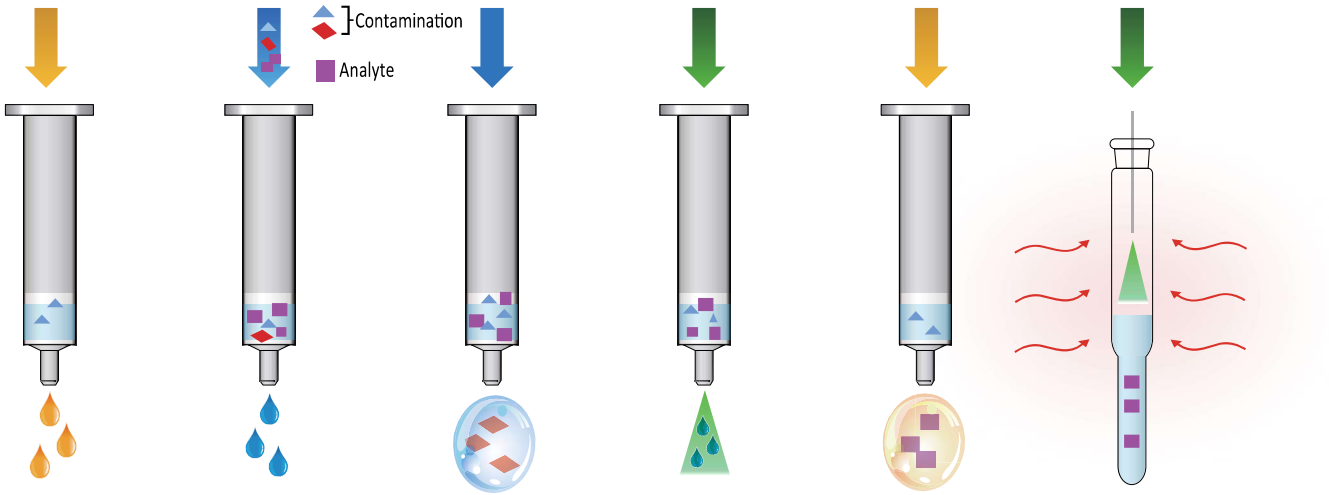
Evaporation is automatically performed in the system. The eluent is purged by nitrogen and can be concentrated by heating in AquaTrace aluminum heating blocks (temperature range: 30 to 60 degrees) together to shorten the concentration time. No need to transfer to an external evaporation system.

The gas flow ends of the nitrogen evaporation is angled type, and the gas outlet operates on the sample/ concentration tube wall, not directly on the sample, preventing gas leakage.



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.

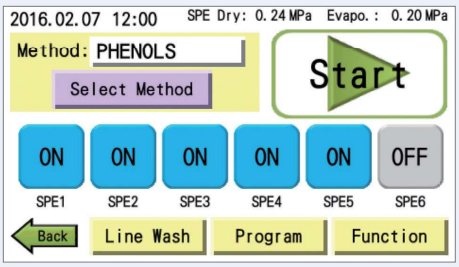


AquaTrace carries out all of these steps automatically.

User-friendly Operation

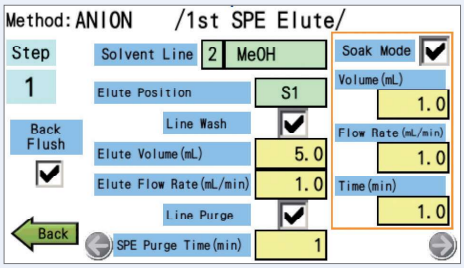
Quick Start

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.



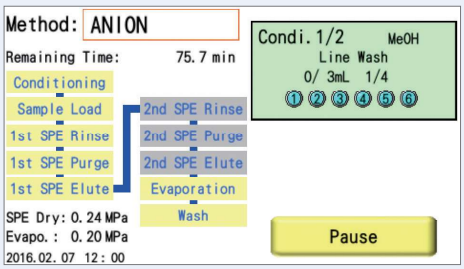
Method Edit

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.

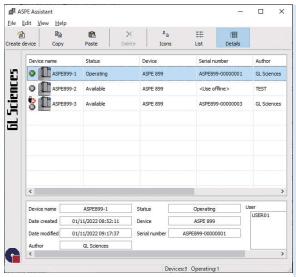


Smarter, More Convenient Functionality

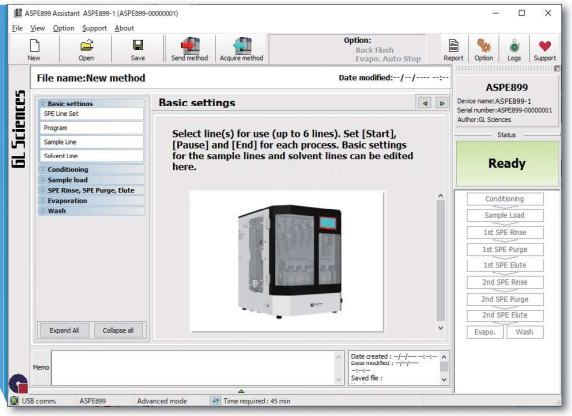
Method Editing Software

The method editing software, 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

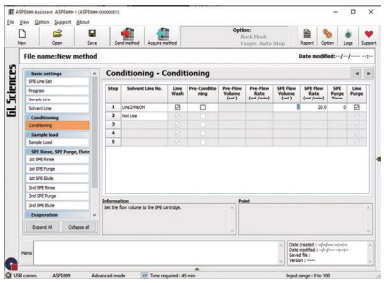


Initial screen

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.

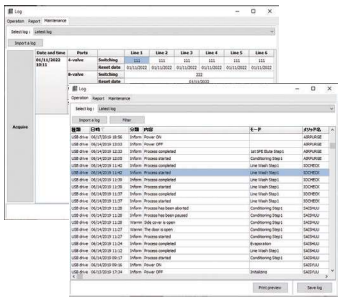
Note: A PC and an Internet connection are required.

Method edit screen



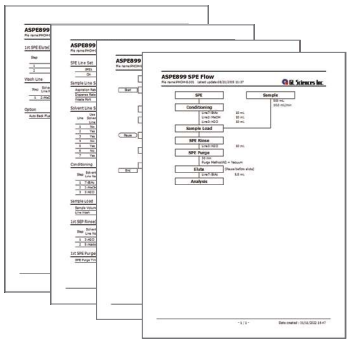
You can select any process of the SPE method and edit its item. To help you, explanations and setting points are displayed. In addition, a method used in the conventional model ASPE799 can be automatically converted for use in the ASPE899.

Log screen



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

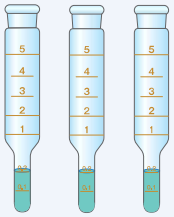
Report function



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.

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. Samples can be concentrated down to volume of 0.5mL, 1mL, 2mL, or depending on the method. Evaporation completely use the solvent level sensor in the nitrogen evaporation modeule.



47mm Disk Type Available

A disk module can be installed in the system and enrichment can be made by 10 ~ 99990mL sample through the disk module.

Specification

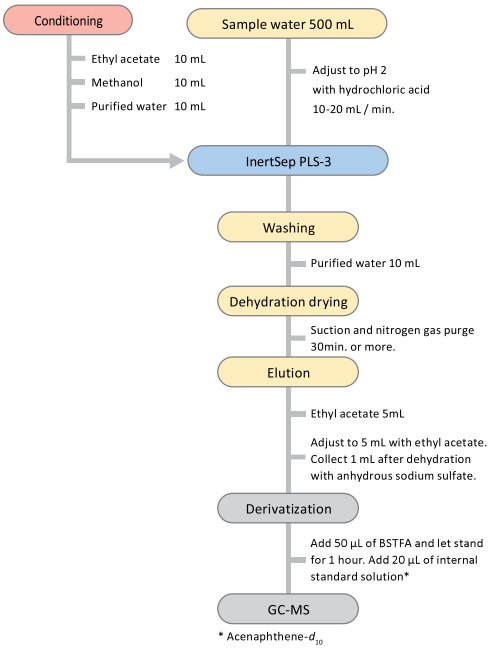
AquaTrace ASPE900

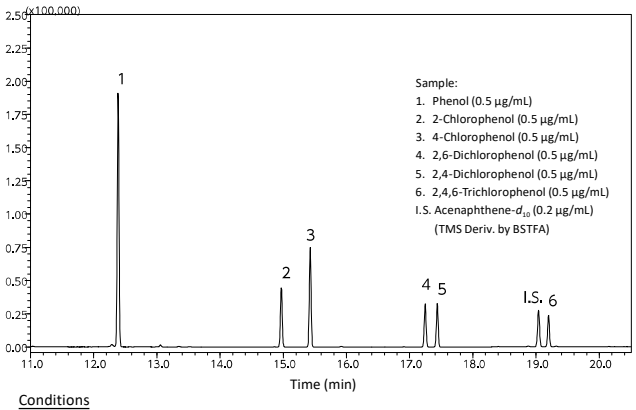
Solvent & Sample delivery method	6 Valveless Piston Pumps
Sample processed at the same time	6 lines in parallel
Operation unit	LCD touch panel
Number of solvents	Up to a maximum of 7
Test tube (can be concentrated)	GL-SPE Graduated Concentration Tube 6 mL, 7 mL GL-SPE Graduated Concentration Tube 10 mL (optional)
Test tube (cannot be concentrated)	Max. 16 mL
Storage methods	120 (Main unit) / 120 (USB memory)
PC connection	Possible
SPE Cartridge	Luer Compatible Cartridge Syringe barrel type 1mL, 3mL, 6mL and 12mL
External input / output	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	0.5-80 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)	Approx. 50 kg
Power requirements	AC 220 V±10%, 50/60 Hz 240VA

* Flow Volume Accuracy is less than ±2% (under the ultrapure water, 2mL/min draw/pump speed, with no loading)
Elute Flow Rate and Soak Flow at 1.0 to 80.0 mL/min

Application

Phenols SPE-GC/MS

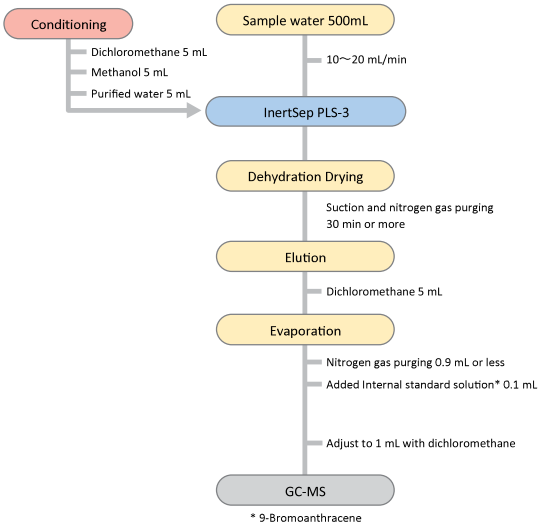


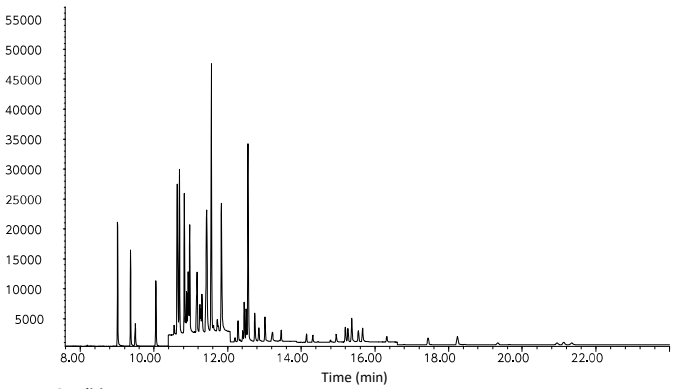


Conditions

System : GC-MS
Column : InertCap 1MS
0.25 mm ID × 30 m df = 1.0 µm
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 µL

Pesticides SPE-GC/MS

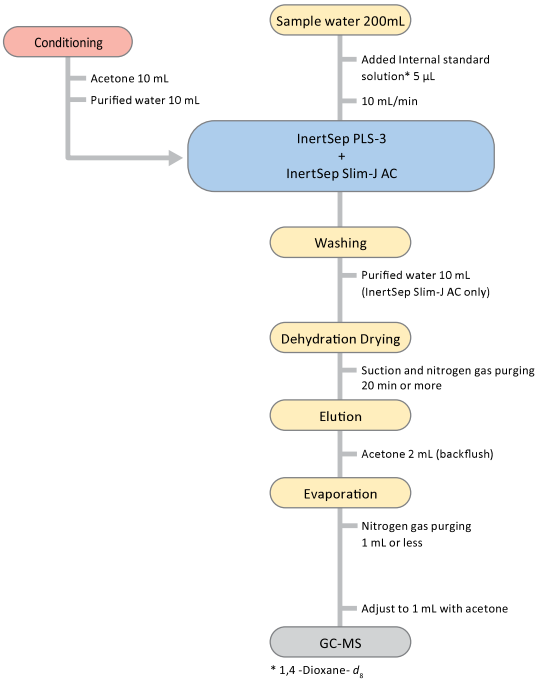




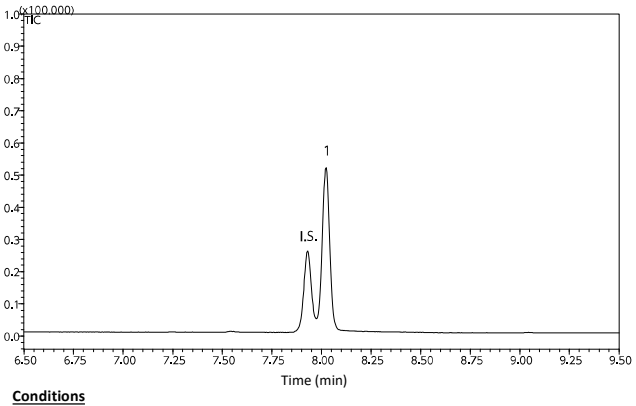
Conditions

System : GC-MS
Column : InertCap 5 MS/NP
0.25 mm I.D. × 30 m df = 0.25 µm
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 µg/mL in Dichloromethane
Injection Vol. : 2 µL

1,4-Dioxane SPE-GC/MS method



* 1,4 -Dioxane- d_8



Conditions

System : GC-MS
Column : InertCap 1 MS
0.25 mm I.D. × 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)

Applications

EPA 505, EPA 506, EPA 507, EPA 521, EPA 525.2, EPA 525.3
EPA 533, EPA 537.1, EPA 535, EPA 539, EPA 545, EPA 547, EPA 549.2
EPA 608, EPA 625, EPA 1613, EPA 1664, EPA 1694, EPA 8270, EPA 8141B
ISO 21675, ISO 25101

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