

SPL-X100 Specification

Size and weight	Main unit	W340mm	D560mm	H520mm	Weight 10kg
	Pump	W390mm	D570mm	H410mm	Weight 37kg
Power	100V (500VA)				
PC spec	Windows 7 or later				
No. of processable specimens	Up to 50				
Pump	Syringe method				
Gas	Nitrogen gas or inert gas				
Environment	Temperature 18 to 28°C				
	Humidity : 40 to 70% RH (no condensation)				
	Other condition : An environment with few disturbing elements such as dust, vibration, spatial noise, corrosive gases, etc. is desirable.				
	The LVI-S250 large volume injector for GC (sold separately) is required. (If you have LVI-S200, it can be upgraded.)				



UP TO
100
Injectors

UP TO
50
Sample-Portion

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Product specifications, appearance, configuration and so on are subject to change without notice for improvement.
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XX-1008 2021-12-24

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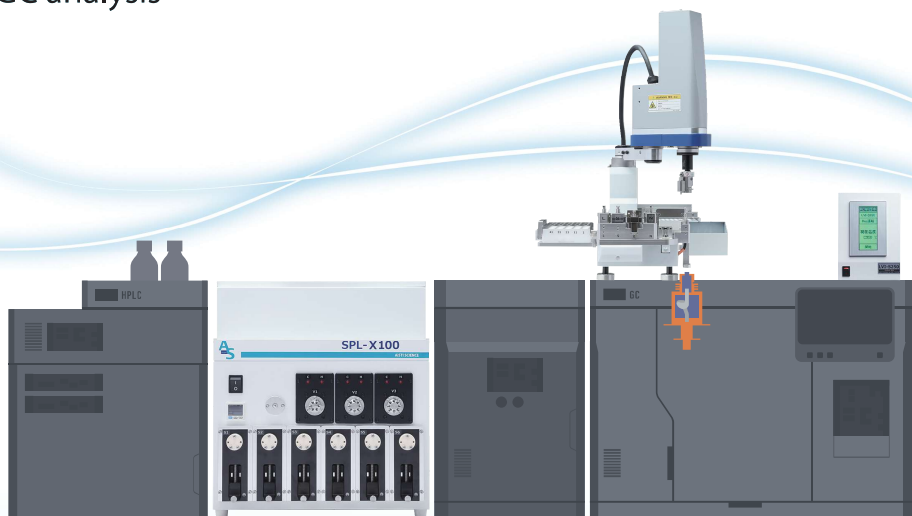
LC-GC Interface Online SPE-LC-GC System SPL-X100



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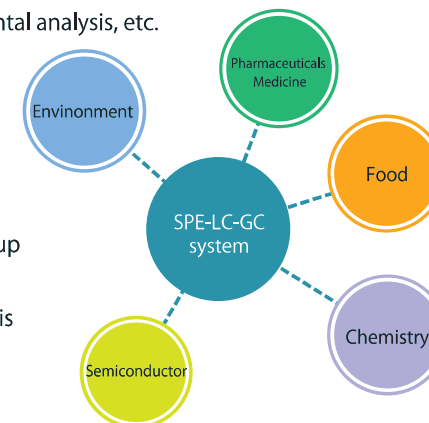
Online SPE-LC-GC System

Automated online operations from solid-phase purification of the specimen, through to separation from reversed-phase HPLC and GC analysis



Field of application

- Individual analysis of pesticide residue, environmental analysis, etc.
- Confirmation analysis after screening analysis
- Confirmation of byproduct substances in organic synthesis, etc.
- Confirmation of target substances that are difficult to ionize by LC/MS
- Production control Online Analysis requiring cleanup
- Automation of preparative analysis
- Multi-component analysis such as fragrance analysis

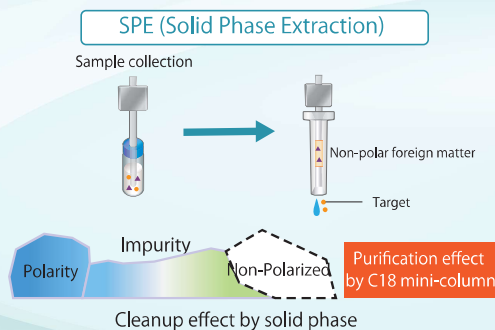


- ☐ Target analysis in a sample with many foreign substances
- ☐ Target analysis in samples with changing sample composition
- ☐ Analysis of by-products in synthesis
- ☐ Component analysis of unknown samples
- ☐ High sensitivity analysis of trace analysis

SPE-LC-GC analysis is expected to play an active role in various fields

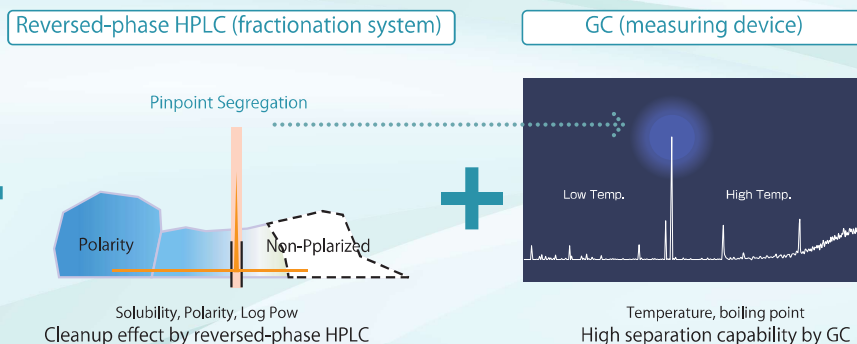
SPE → LC → GC

Advantages of Solid Phase Extraction



Foreign substances that may damage the LC column are removed in advance by the solid phase. Concentration in the solid phase also enables highly sensitive analysis.

Advantages of Reversed-Phase HPLC-GC Systems



Reversed-phase HPLC as a pretreatment provides highly selective cleanup with large sample capacity and wide range of separation capabilities for more efficient separations with GC

Using reversed-phase HPLC as a pretreatment provides excellent cleanup of dirty samples.

Automated, simplified, and abbreviated pretreatment is effective as a rapid analytical method.

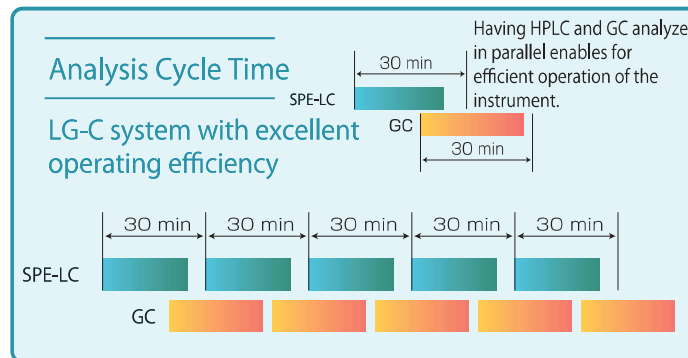
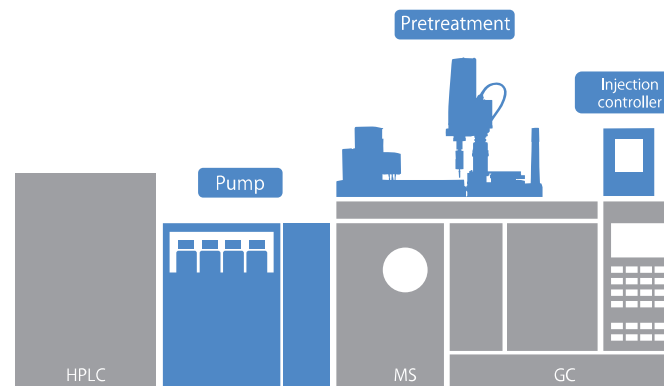
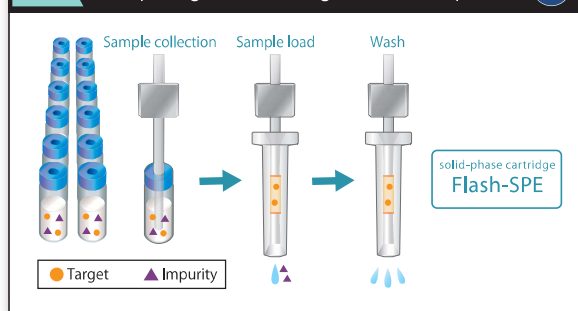
Optimal system for systematic control and assurance by instrumentation

Incorporation of solid-phase extraction function prior to LC reduces damage to HPLC and enables high-sensitivity analysis.

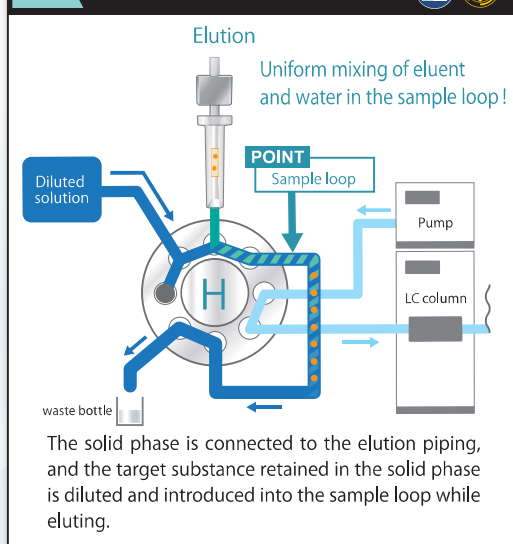
Separated by hydrophilic and hydrophobic properties in LC, and by boiling point difference in GC.

Online SPE-LC-GC system treatment process

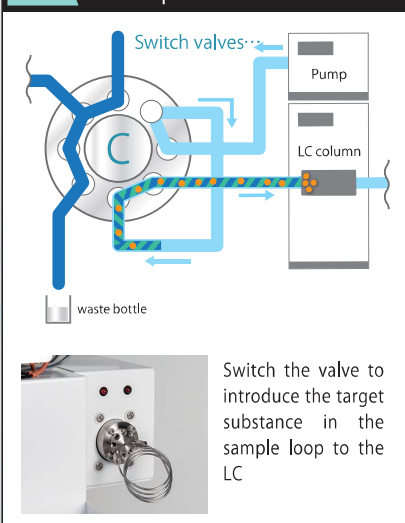
01 Sampling & loading on solid phase



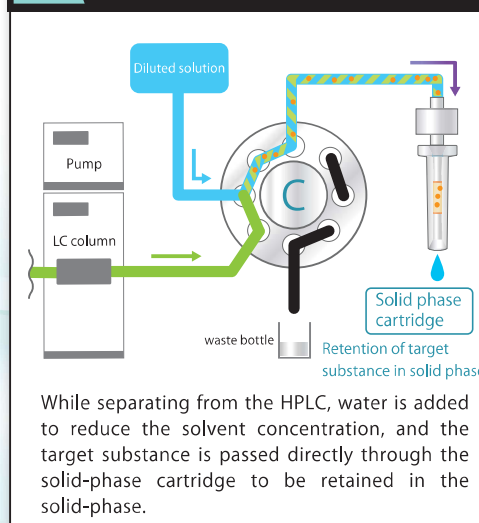
02 Elution & Solvent Dilution



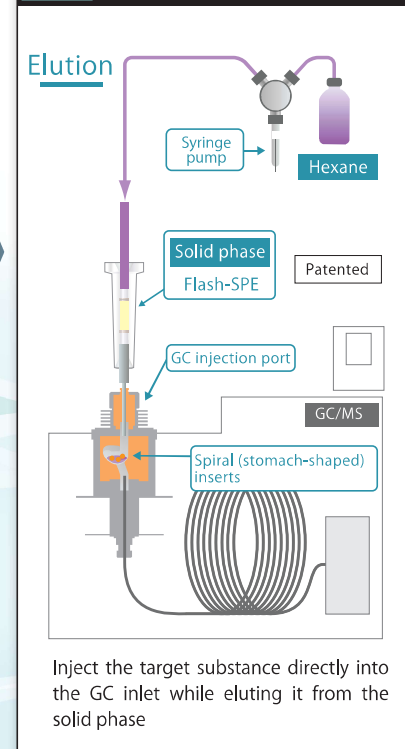
03 Introduction to LC & LC Separation



04 LC Preparation & Solid Phase Concentration



05 Elution & Injection into GC



HYBRID ONLINE SPE-LC

- Combines the offline and online advantages of conventional SPE-LC
- Offline advantage of not contaminating the valve when loading the sample onto the solid phase
- Online advantage of introducing the entire eluate from the solid phase into the LC



Mixing Injection Valve System

MiVS

Mixing Injection Valve System (Patent pending)

- The eluent and diluent are mixed in the valve and collected in the sample loop.
- The diluted eluent is introduced into the LC column by switching the flow path.
- pH adjusters and derivatization reagents can be added to the eluate from the solid phase.
- Dividing from LC are fractionated by channel switching, and the fractionated solution and diluent are mixed and introduced into the solid phase at the same time.

by SPE-LC-GC system

Application to single-product analysis requiring multiple sample processing and confirmation analysis after screening analysis

Analysis of tolclophos-methyl (TCM) in ginger, a food with many foreign substances in pesticide residue analysis

Extraction Flow

10 g of ginger collected

Acetonitrile 10mL

Homogenize

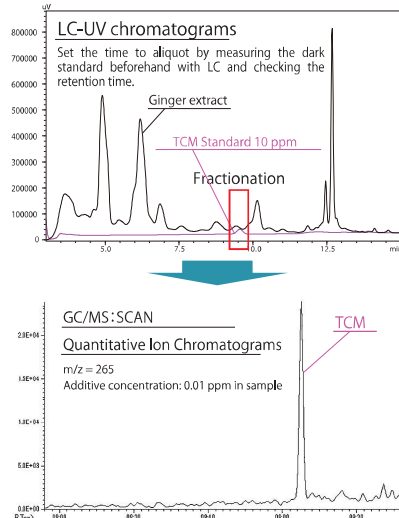
- NaCl : 1g
- Trisodium Citrate Dihydrate: 1g
- Disodium Hydrogen Citrate 1.5-Hydrate: 0.5g
- Anhydrous MgSO₄: 4g

Stir (shake by hand for 1 min)

Centrifugation (3,500 rpm for 5 min)

Acetonitrile layer extractant

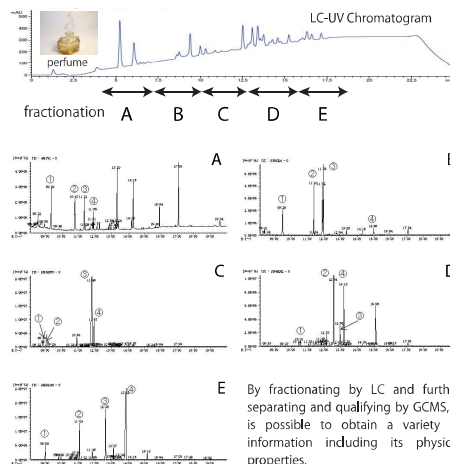
Pour 1mL of the extracted solution in a vial and set it in the SPE-LC-GC/MS



by SPE-LC-GC system

Automatic analysis of all preparative LC fractions

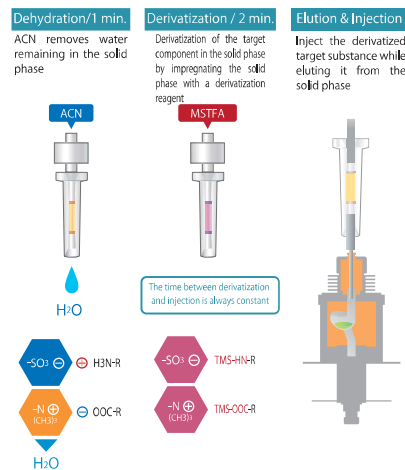
In preparative liquid chromatography, each fraction is concentrated, dried, and solidified before GC/MS measurement, but this system enables fully automated analysis.



by SPE-LC-(SPE)-GC system

Solid-phase derivatization

Even target substances with carboxylic acids, amino groups, or phenol groups, which GC is not good at, can be measured by GC/MS using the solid-phase derivatization method.

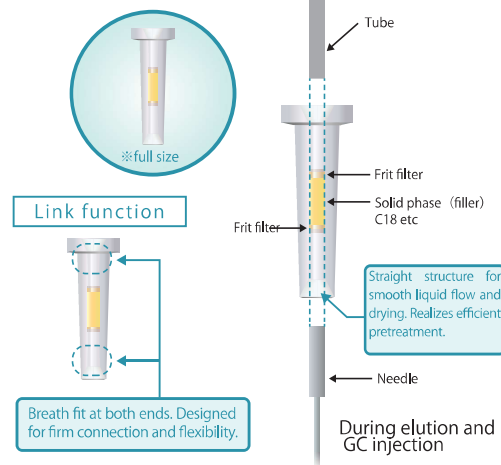


Patented

Flash-SPE

For Online SPE-GC

(Solid phase mini cartridge)



Solid-phase cartridges for online SPE-LC-GC

Low filling volume for no waste analysis

- Linear structure for smooth sample and solution flow
- Fast aeration drying (30 seconds)
- Simple structure optimized for automation
- Small solid-phase loading volume (2-5 mg)
- Piping and needles can be connected from both the top and bottom ends



Large Volume Injection port device for GC LVI-S250

All of the HPLC preparative volume to GC
Stable, high-volume injection method for highly accurate, sequential SPE-LC-GC analysis.

