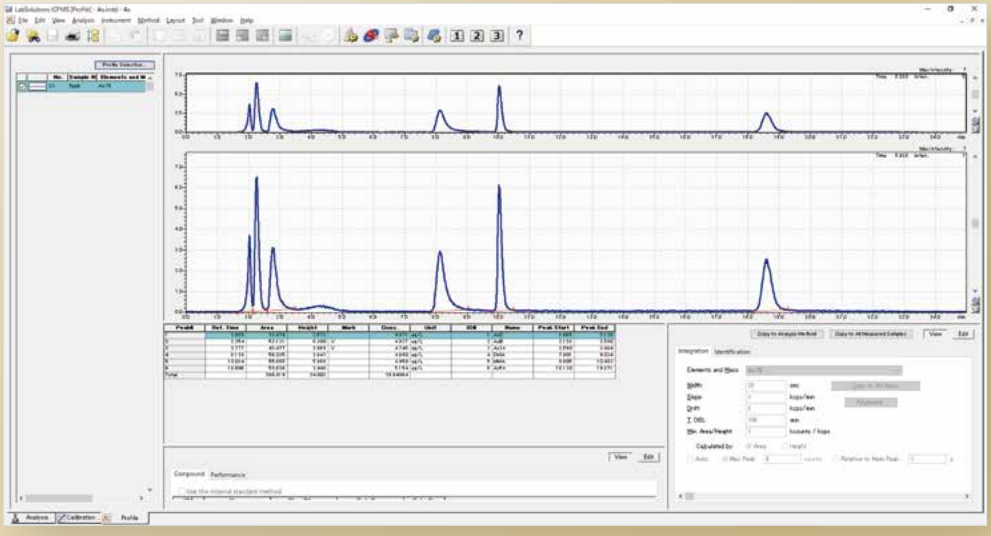
SHIMADZU
Excellence in Science

For ICP Mass Spectrometers

# LC-ICP-MS Method Package for Arsenic Speciation Analysis Type 1



This method package can only be used with a Shimadzu LC-ICP-MS system configured with an ICPMS-2040/2050 Series or ICPMS-2030 Series system in combination with a Nexera™ inert series or Prominence™ inert LC system. For details about LC system requirements, contact a Shimadzu representative.

Shimadzu LC-ICP-MS System

## Separates and Quantitates Six Types of Arsenic Compounds

This method is for gradient elution using an anion exchange column, 0.025 mol/L ammonium dihydrogen phosphate solution as mobile phase A, and water as mobile phase B. It can separate arsenocholine (AsC), arsenobetaine (AsB), arsenic trioxide ($As^{3+}$), dimethylarsinic acid (DMA), monomethylarsonic acid (MMA), and arsenic ($As^{5+}$) forms of arsenic.

## Data Integrity Compliance

LabSolutions™ ICPMS TRM (for time-resolved measurements), which is optional software for ICPMS-2040/2050 Series and ICPMS-2030 Series systems, can centrally control both the main ICPMS unit and LC system. LabSolutions ICPMS TRM can also be connected to a LabSolutions DB or CS analytical data processing system* to ensure full compliance with data integrity requirements.

* Compatible with ICPMS-2030 Series software, Ver. 1.60 or later

## No Method Development Necessary

Analytical methods optimized for Shimadzu LC-ICP-MS systems are provided as method files*. Consequently, users do not need to develop analytical methods. That means users can start analysis immediately after instrument installation.

* ICPMS-2030 Series method files can be used in system environments with LabSolutions ICPMS Ver. 1.60, LabSolutions ICPMS TRM Ver. 1.60, or later versions.

Because the analysis methods included in this method package use ammonium phosphate as a mobile phase, the rotary pump and a few other parts included standard in ICPMS-2030 Series systems must be replaced. For details, contact a Shimadzu representative.

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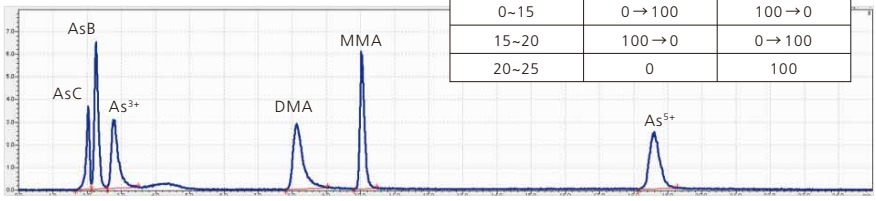



| Time (min) | Mobile Phase A (%) | Mobile Phase B (%) |
|---|---|---|
| 0~15 | 0→100 | 100→0 |
| 15~20 | 100→0 | 0→100 |
| 20~25 | 0 | 100 |

Chromatogram of Standard Arsenic Solution and Gradient Program

### Analytical Conditions

Column : HAMILTON PRP-X100 (10.0 µm, 250 mm x 4.1 mm)
Mobile phase A: 0.025 mol/L ammonium dihydrogen phosphate solutions (pH-adjusted with aqueous ammonia to pH 8.0)
Mobile Phase B: Water
Flowrate : 1 mL/min
Injection Volume: 50 µL
Retention Time: 25 min
Column Temp.: 40 °C

## No Method Development Necessary

### Package Contents

This method package contains method files, an instruction manual on how to prepare the mobile phase and standard solution on a CD-ROM so analysis can start immediately after the instrument has been installed. However, the column, reagents, and other supplies not included in the package must be obtained separately.

### Compatible LC System

- Solvent Delivery Unit LC-40i / LC-20Ai
- System Controller CBM-40 / CBM-20A
- Degassing Unit DGU-403 / DGU-405 / DGU-20A3R / DGU-20A5R
- Autosampler SIL-40 XSi / SIL-20AC
- Column Oven CTO-40C / CTO-20AC

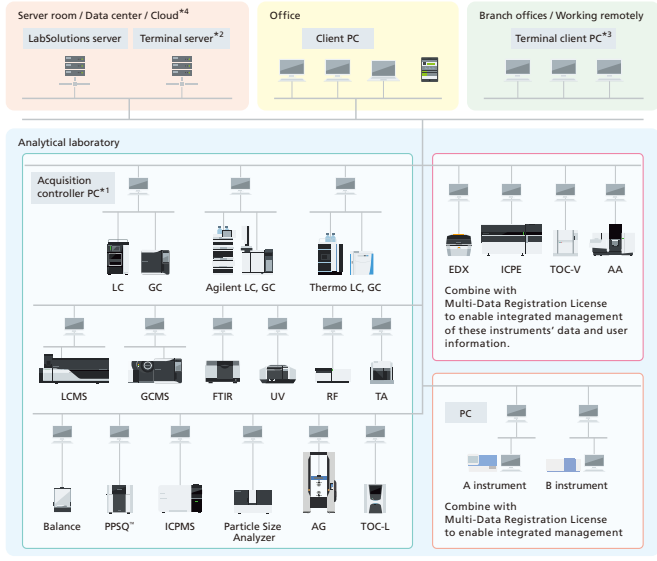
* For details, contact a Shimadzu representative.

## Data Integrity Compliance

### Supports Connection to LabSolutions DB/CS

LabSolutions ICPMS TRM (for time-resolved measurements) can be connected to a LabSolutions DB/CS analytical data processing system to achieve safe and secure data management.
Users can choose either a standalone system (LabSolutions DB) or a networked system (LabSolutions CS) based on their operating environment.

*1 The acquisition controller PF controls analytical instruments.
*2 This server is for using Terminal Services. Terminal Services enable users to view data reports and perform electronic signature operations and is ideal for remote connections due to the low network load. Using Terminal Services for analysis and postrun analysis operations is only supported for LC, GC, LCMS, and GCMS instruments.
*3 Using Terminal Services does not require installing LabSolutions software in a client PC or tablet computer.
*4 It also functions properly when configured in any type of cloud (IaaS) server, such as AWS (Amazon Web Services), Microsoft® Azure®, or GCP™ (Google Cloud Platform™).




LabSolutions CS Network



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