



Arsenic Speciation in a Water Matrix

Method

EPA 1632A

The regulatory standard for arsenic in drinking water is 10 ppb (or 10 µg/L) and the species type of the greatest concern is inorganic arsenic. There are other recommendations that WHO water quality guidelines should be less than 0.17 ppb. Eurofins Frontier Global Sciences pioneered the development of this method. With this method, the MRL is 0.01 ppb with an MDL of 0.003 ppb so you will have confidence the results that are determined are accurate.

Accreditations

NELAC/NELAP and ISO 17025

Method Description

Arsenic Speciation by HG-CT-GC-AAS: Hydride generation cryogenic trapping gas chromatography atomic absorption spectrophotometry is used for sensitive species specific determination of arsenite [As(III)], arsenate [As(V)] and the determination of total inorganic arsenic [TIAs] at very low concentration levels (below 0.10 µg/L).

MRL/MDL

Method	Analyte	MRL	MDL	Units
EPA 1632	Total Inorganic Arsenic (TIA)	0.01	0.003	µg/L
EPA 1632	Arsenite (As3)	0.01	0.003	µg/L
EPA 1632	Arsenate (As5)*	0.01	0.003	µg/L

*Calculated Analyte (As5 = TIA-As3)

Sample Handling/Preservation

Analyte	Matrix	Bottle Types	Min Volume	Ideal Volume	Shipping	Holding Time to Preservation	Preservative	Storage	Holding Time to Analysis
As speciation by LG-HG-AFS	Water	HDPE or PETG	125 mL	250 mL	≤ 4°C	48 Hrs **	1.5mL/L of conc. HCl	≤ 4°C, or Cryo frozen	28 days

** According to EPA 1632, section 8.3, aqueous sample preservation must be performed in the field to reduce changes in As speciation that may occur during transport and storage. If field preservation is not possible, the samples must be shipped on-ice and preservation must occur within 48 hours from sample collection.