



Chromium Speciation in a Water Matrix

(Wastewater, NPDES, Seawater, Groundwater)

Method

EFGS-129

Accreditations

NELAC/NELAP and ISO 17025

Method Description

Chromium Speciation by LC-ICP-MC: Chromium species separation and detection occurs using liquid chromatography coupled to an inductively couple plasma mass spectrometer (LC-ICP-MS). The current method of LC separation for Chromium uses an anion-exchange column. In brief, the prepared sample is injected into a mobile phase with an alkaline gradient. The mobile phase, containing the injected sample, is passed through the chromatography column, which contains a stationary phase.



After separation from the LC system, samples are introduced into inductively coupled plasma (ICP) where energy-transfer processes cause desolvation, atomization and ionization. The resulting signal is processed by secondary chromatography software and then entered into a Laboratory Information Management System (LIMS) for review and reporting.

MRL/MDL

Method	Analyte	MDL	MRL	Units
EFGS-129	Chromium (VI)	0.0640	0.200	µg/L

Sample Handling/Preservation

Analyte	Matrix	Bottle Types	Min Volume	Ideal Volume	Shipping	Holding Time to Preservation	Preservative	Storage	Holding Time to Analysis
CR(VI) speciation by LC-ICP-MS	Water	New HDPE	250 mL	500 mL	Chilled ≤ 4°C	Preserve in the field or analyze within 24 hours	Preserve to pH 9.3 - 9.7 with KOH or NaOH	Dark, ≤ 4°C	28 days

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