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Press Release

Nippon Instruments Corporation Publishes Method for Measurement of Total Mercury in Sediment Using Direct Mercury Analysis

November 9, 2017 – Osaka, Japan. Nippon Instruments Corporation ([NIC](#)) is pleased to announce the publication of a new application report describing the measurement of mercury (Hg) in sediment by thermal decomposition using atomic absorption spectroscopy. The method described in the report complies with [US EPA Method 7473, Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry](#).

Mercury is a naturally occurring element that is pervasive in aquatic environments. Sediment mercury is mercury that has become embedded into the bottom substrates of aquatic ecosystems. Mercury enters bodies of water naturally through volcanic activity and mineral weathering of rocks over time, as well as through industrial and urban sources such as coal-burning power plants or hazardous waste incineration. Mercury that is released into the air may eventually settle into or be washed into water, where it deposits onto lake bottoms, streambeds, wetlands and intertidal zones and is integrated into bottom substrates.

Mercury in contaminated sediments can result in high levels of significant exposure for aquatic species, wildlife and human populations consuming fish. Sediment mercury can be converted by microorganisms into methylmercury, a highly toxic chemical that builds up in fish, shellfish and animals that consume them. Mercury is dangerous to both natural ecosystems and humans because it is highly toxic, especially due to its ability to damage the central nervous system. To prevent mercury poisoning, or assess the possibility of a contamination problem, it is necessary to accurately quantify total mercury in sediments.



**NIC MA-3000 Direct Thermal
Decomposition Mercury Analyzer**



NIC Application Note MA-3A-EN-001, *Total Mercury in Sediment Using Direct Mercury Analysis*, includes information about calibration and measurement, and highlights the performance of the [NIC MA-3000](#) direct thermal decomposition mercury analyzer.

For the analysis described in the report, calibration was done using certified aqueous ionic-mercury standard solution diluted to the required concentration. Measurement was performed by the MA-3000 analyzer, a dedicated direct mercury analyzer that selectively measures total mercury by thermal decomposition, gold amalgamation and cold vapor atomic absorption spectroscopy on virtually any sample matrix.

The MA-3000 analyzer is designed to provide quick results without an elaborate, time-consuming sample preparation process. The results show that the instrument is able to analyze sediment samples with accuracy and precision.

A copy of this report may be requested at shar-nic@rigaku.co.jp

About Nippon Instruments Corporation

Nippon Instruments produces a broad line of Hg monitors suitable for surveying for vapor-phase elemental mercury in air, and elemental and mercury compounds including methylmercury, in gases, liquids and solids. Materials analyzed include fuels – coal, lignite, crude oil, natural gas; liquids such as waste, drinking and river water; incinerator stack gases; animal products; human tissue and blood and solid waste streams.

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