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Press Release

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

August 24, 2017 – Osaka, Japan. Nippon Instruments Corporation ([NIC](#)) has announced the publication of a new application report describing the analysis of dried kelp samples for mercury levels using atomic absorption spectroscopy. NIC Application Note MA-3A-FD-002 includes complete information about sample preparation, calibration and measurement, and demonstrates the performance of the [MA-3000](#) direct thermal decomposition mercury analyzer. The method complies with [US EPA Method 7473](#), *Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry*.

Kelps are large seaweeds that grow in underwater forests in shallow oceans. Kombu, a type of kelp that is widely cultivated as a key ingredient in Chinese, Japanese, and Korean cuisines, is used to flavor broths and stews, as a garnish for rice and other dishes, and as a primary ingredient in popular snacks. Dried kelp is also sold in the Western world as a dietary herbal supplement.

Certain kelp varieties have been found to be highly absorptive of mercury from aqueous solutions, and high levels of mercury in kelp supplements have been widely reported. Mercury is dangerous to both natural ecosystems and humans because it is highly toxic. It has the ability to damage the central nervous system and poses a particular threat to human development in utero and in early childhood. To prevent mercury poisoning, it is therefore necessary to accurately quantify the total mercury in kelp and kelp products that enter the food chain.



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



For the analysis described in the report, calibration is done using certified aqueous ionic-mercury standard solution diluted to a specified concentration. Measurement was performed by the NIC MA-3000 analyzer, a dedicated direct mercury analyzer that selectively measures total mercury by thermal decomposition, gold amalgamation and cold vapor atomic absorption spectroscopy. The instrument is designed to offer rapid results without elaborate, time-consuming sample preparation requirements. The results indicate that the MA-3000 analyzer measures mercury in dried kelp 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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