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# Press Release

## Nippon Instruments Corporation Publishes Method for Measurement of Total Mercury in Seaweed by Direct Mercury Analysis

**December 6, 2017 – Osaka, Japan.** Nippon Instruments Corporation ([NIC](#)) has announced the publication of a new application report describing the analysis of mercury levels in seaweed using atomic absorption spectroscopy. NIC Application Note MA-3A-FD-004 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*.

Hijiki (*Sargassum fusiforme*) is a brown seaweed vegetable that grows in the wild on rocky coastlines around Japan, Korea, and China. It has been a part of the Japanese diet for centuries. It is rich in dietary fiber and essential minerals such as calcium, iron, and magnesium.

Hijiki is also said to aid health and beauty, according to Japanese custom. In the western world, Hijiki pills are available as a nutraceutical food supplement. Many forms of aquatic life also eat seaweed, where it enters into the food chain.

Edible seaweeds of all varieties have been shown to contain 1–50 parts per billion (ppb) of mercury. Bioaccumulation in the aquatic food chain carries over into human populations, where it can threaten development in utero and in early childhood by causing central nervous system damage. To prevent mercury poisoning, it is therefore necessary to accurately quantify total mercury in seaweed and seaweed products.



**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 is able to measure mercury in hijiki (seaweed) samples with accuracy and precision.

A copy of this report may be requested at [shar-nic@rigaku.co.jp](mailto: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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