



Nippon Instruments Corporation  
14-8 Akaoji-cho, Takatsuki-shi  
Osaka 569-1146  
Japan  
TEL: +81 7 26 945 195  
FAX: +81 7 26 940 663

# Press Release

## Nippon Instruments Corporation Publishes Method for Measurement of Total Mercury in Shark Liver Oil Using Direct Mercury Analysis

July 26, 2017 – Osaka, Japan. [Nippon Instruments Corporation](#) (NIC) has published a new application report describing the measurement shark liver oil by thermal decomposition using atomic absorption spectroscopy. The method detailed in the report complies with [US EPA Method 7473](#), *Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry*.

NIC Application Note MA-3A-FD-010 includes complete information describing sample preparation, calibration and measurement, and highlights the performance of the [NIC MA-3000](#) direct thermal decomposition mercury analyzer.

A recent study of tiger sharks from the coast of Ishigaki Island, Japan found a rapid increase in hepatic mercury (Hg) concentration concurrent with the onset of maturity in sharks that may arise from the continuous intake of mercury via their food and exacerbated by the slower growth of mature sharks.

Shark liver oil has been used for centuries as a folk remedy to promote the healing of wounds as well as a treatment for respiratory tract and digestive system problems. It continues to be used worldwide as a dietary supplement and for the treatment of a variety of diseases.

Bioaccumulation of mercury in shark liver oil carries over into human populations, where it can result in mercury poisoning. Mercury is highly toxic to humans, especially because of its ability to damage the central nervous system and poses a particular threat to human development in utero and in early childhood. Accurate quantification of total mercury in shark liver oil supplements is therefore necessary to prevent mercury poisoning.



**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 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. 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 reproduce good recovery after repeated analysis of shark liver oil, demonstrating the ability to meet increasing laboratory demand for simple, fast and precise mercury measurements.

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.

For further information, contact:

International Sales Division

TEL: +81- 726 94 5195

[shar-nic@rigaku.co.jp](mailto:shar-nic@rigaku.co.jp)

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