

Trace metals found in food and water can range from nutritionally beneficial to highly toxic, depending on the element concerned, its concentration, and chemical form. Accurately quantifying trace metals is not only vital to food safety and consumer health, but can also identify fraudulent mislabeling of a food's origin, since the metal content can be used to determine provenance.

# **Agilent atomic spectroscopy solutions**

- Accurate, reliable, and economical atomic absorption spectrometers (AA) are ideal for low numbers of samples or when measuring only a few elements.
- The Agilent microwave plasma atomic emission spectrometer (MP-AES) runs on air, enabling unattended multi-element analysis without flammable and expensive gases an ideal cost-effective alternative to AA.
- The Agilent inductively coupled plasma optical emission spectrometer (ICP-OES) provides simultaneous metals analysis and industry-leading sample throughput.
- Agilent ICP mass spectrometers (ICP-MS and ICP-QQQ) have the broadest elemental coverage, lowest detection limits, and support for speciated analysis with chromatography coupling.



#### FREE ON-DEMAND WEBINAR

From labs large to small, from elements major to trace, Agilent's leading atomic spectroscopy portfolio has your Food and Agriculture application needs covered. Watch this quick on-demand webinar to learn how.

#### **Visit:**

www.agilent.com/chem/ elemental\_food





## **Atomic absorption spectroscopy (AA)**

- · Low system cost
- Low to moderate productivity
- High ppb to %
- Approximately 3% total dissolved solids

The Agilent low-cost AA is commonly used for typical food analyses such as milk powder, shellfish, and plant tissue. It has unique fast sequential capability, simplicity of operation, and very good sensitivity.



### Microwave plasma atomic emission spectroscopy (MP-AES)

- Moderate to high productivity
- Medium ppb to %
- · Low running cost
- Approximately 3% total dissolved solids

The Agilent MP-AES saves you money because it runs on air. MP-AES delivers accurate and reliable performance for typical food samples, including fruit juice and rice flour, and common soil analysis of bioavailable cations and trace toxic metals.



## **Inductively coupled plasma optical emission spectroscopy (ICP-0ES)**

- Highest productivity (<30 s per sample) with SVS 2+</li>
- Low ppb to %
- Up to 30% total dissolved solids

The Agilent 5100 ICP-OES is the world's most productive ICP-OES. Utilizing a vertical plasma for axial and radial emissions, it delivers excellent sensitivity and high matrix capability. Common applications include trace metals in soil extractions, fertilizers, and bovine samples.



# Inductively coupled plasma mass spectrometry (ICP-MS and ICP-QQQ)

- High productivity (<60 s per sample) with ISIS 3</li>
- Low ppg to %
- Up to 25% total dissolved solids

The Agilent 7900 ICP-MS offers superior detection limits, wider dynamic range and high matrix tolerance. The Agilent 8800 ICP-QQQ with MS/MS mode provides ultimate accuracy for advanced applications. Common applications include toxic trace elements in foodstuffs, arsenic speciation in rice and fruit juice, mercury in seafood, trace elements in malt spirit beverages, and metals in edible oils.



For more information: Contact your local Agilent representative or visit:

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