Standard analytical methods for the determination of metals and other chemical elements

This non-exhaustive list contains standard methods for the determination of metals and other chemical elements in food products. Inclusion in the list does not constitute endorsement by the NLR-MN, nor does it imply that the performance of the method is automatically adequate for the purpose of use by the laboratory.

Arsenic and arsenic species

UNI EN 17851:2023

Foodstuffs - Determination of elements and their chemical species - Determination of Ag, As, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Se, Tl, U and Zn in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 16802:2016

Foodstuffs - Determination of elements and their chemical species - Determination of inorganic arsenic in foodstuffs of marine and plant origin by anion-exchange HPLC-ICP-MS

CEN/TS 16731:2014

Foodstuffs - Determination of hydride-reactive arsenic compounds in rice by atomic absorption spectrometry (Hydride-AAS) following acid extraction

EN 15763:2009

Foodstuffs - Determination of trace elements - Determination of arsenic, cadmium, mercury and lead in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 15517:2008

Foodstuffs - Determination of trace elements - Determination of inorganic arsenic in seaweed by hydride generation atomic absorption spectrometry (HGAAS) after acid extraction

EN 14546:2005

Foodstuffs - Determination of trace elements - Determination of total arsenic by hydride generation atomic absorption spectrometry (HGAAS) after dry ashing

EN 14627:2005

Foodstuffs - Determination of trace elements - Determination of total arsenic and selenium by hydride generation atomic absorption spectrometry (HGAAS) after pressure digestion

EN 14332:2004

Foodstuffs - Determination of trace elements - Determination of arsenic in seafood by graphite furnace atomic absorption spectrometry (GFAAS) after microwave digestion

Cadmium

UNI EN 17851:2023

Foodstuffs - Determination of elements and their chemical species - Determination of Ag, As, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Se, Tl, U and Zn in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 15763:2009

Foodstuffs - Determination of trace elements - Determination of arsenic, cadmium, mercury and lead in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 14084:2003

Foodstuffs - Determination of trace elements - Determination of lead, cadmium, zinc, copper and iron by atomic absorption spectrometry (AAS) after microwave digestion

EN 14083:2003

Foodstuffs - Determination of trace elements - Determination of lead, cadmium, chromium and molybdenum by graphite furnace atomic absorption spectrometry (GFAAS) after pressure digestion

Iodine

EN 15111:2007

Foodstuffs - Determination of trace elements - Determination of iodine by ICP-MS (inductively coupled plasma mass spectrometry)

Mercury and methylmercury

EN 17266:2019

Foodstuffs - Determination elements and their chemical species - Determination of organomercury in seafood by elemental mercury analysis

EC 1-2020 EN 17266:2019

Foodstuffs - Determination elements and their chemical species - Determination of organomercury in seafood by elemental mercury analysis

EN 16801:2016

Foodstuffs - Determination of elements and their chemical species - Determination of methylmercury in foodstuffs of marine origin by isotope dilution GC-ICP-MS

EN 15763:2009

Foodstuffs - Determination of trace elements - Determination of arsenic, cadmium, mercury and lead in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 13806:2002

Foodstuffs - Determination of trace elements - Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after pressure digestion

Nickel

UNI EN 17851:2023

Foodstuffs - Determination of elements and their chemical species - Determination of Ag, As, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Se, Tl, U and Zn in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

Lead

UNI EN 17851:2023

Foodstuffs - Determination of elements and their chemical species - Determination of Ag, As, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Se, Tl, U and Zn in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 15763:2009

Foodstuffs - Determination of trace elements - Determination of arsenic, cadmium, mercury and lead in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 14084:2003

Foodstuffs - Determination of trace elements - Determination of lead, cadmium, zinc, copper and iron by atomic absorption spectrometry (AAS) after microwave digestion

EN 14083:2003

Foodstuffs - Determination of trace elements - Determination of lead, cadmium, chromium and molybdenum by graphite furnace atomic absorption spectrometry (GFAAS) after pressure digestion

Tin

EN 15765:2009

Foodstuffs - Determination of trace elements - Determination of tin by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion

EN 15764:2009

Foodstuffs - Determination of trace elements - Determination of tin by flame and graphite furnace atomic absorption spectrometry (FAAS and GFAAS) after pressure digestion