



NQAC

Nestlé Quality Assurance Center  
Dublin

# Technical Datasheet

**Analysis Name:** Nine Nutritional Minerals by ICP-OES

**Method Number:** OM-AOAC-2011.14

**Scope of Application:** This method describes the determination of calcium, copper, iron, potassium, magnesium, manganese, sodium, phosphorus, and zinc by ICP-OES in foods, beverages (finished, concentrates, and powders), health products, pet foods, raw materials such as premixes, food grade oils, salts\*, and tastemakers, and gummy-based vitamins. The method is not suitable for the analysis of silicates or soil samples.

\*Raw material salts can be analyzed, but this test is not intended or designed to be a replacement for an assay test of a relatively pure chemical. Consider method reproducibility versus your specification requirements when determining suitability for your testing needs.

**Description:** Test portion is heated at 200°C with nitric acid in a closed vessel microwave digestion system. Digested samples are ionized through inductively coupled argon plasma and the element emission rays' position and intensity are measured.

**Sample Weight  
Required:** 25 g

**Method Reference:** AOAC 2011.14 Ca, Cu, Fe, Mg, Mn, K, P, Na, and Zn in Fortified Food Products

**Analytical Platform:** ICP-OES



**NQAC**

Nestlé Quality Assurance Center  
Dublin

**Special Information:** Indicate each element required.

Supplement and Raw Material sample submissions must include either a Certificate of Analysis, or an ingredient list with estimated target levels for all elements encompassed by the screen.

If certain components are at levels above our calibrated curve range, it may be necessary to raise the limit of quantitation for other analytes to accommodate the elevated levels. (This protects the instrumentation from contamination.)

Supplement and Raw Material samples lacking the above documentation, will be tested at our standard dilution levels, and may result in delays or additional charges.

Sodium is required to complete salt as sodium testing.

When submitting specifications, ensure that appropriate units are included (for instance: mg/100g, etc.).

Analyte Reported	Alias	Unit of Measure	Limit of Quantification				Reproducibility
			Beverages	Foods	Powders	Fats & Volatiles	
Calcium	Ca	mg/100 g	4	8	15	30	15%
Copper	Cu	mg/100 g	0.05	0.1	0.2	0.4	15%
Iron	Fe	mg/100 g	0.3	0.5	1	2	15%
Magnesium	Mg	mg/100 g	2	3	5	10	15%
Manganese	Mn	mg/100 g	0.002	0.003	0.005	0.01	15%
Phosphorus	P	mg/100 g	3	5	10	20	15%
Potassium	K	mg/100 g	5	10	20	40	15%
Sodium	Na	mg/100 g	1	2	4	8	15%
Zinc	Zn	mg/100 g	0.1	0.3	0.5	1	15%
Salt as Sodium		%	0.01				15%