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Nestlé Quality Assurance Center
Dublin

Technical Datasheet

Analysis Name: Radioactivity by Gamma Spectrometry

Method Number: LI-00.141

Scope of Application: The method has been in-house validated for water, liquid milk and milk products, vegetables, fruits, polymer (silicone resin), and gummy-based vitamins for radionuclides emitting from 40 keV to 2000 keV.

Description: Method for the quantitative determination of the long-lived natural (e.g. Potassium-40) and regulated artificial gamma-emitting radionuclides (e.g. Cesium-134 and Cesium-137) in food raw materials and finished products by high resolution gamma spectrometry using a high purity germanium (HPGe) detector.

The method is also intended to detect and measure short lived regulated gamma-emitting radionuclides (e.g. Iodine-131) and other gamma-ray emitting radionuclides after any nuclear accidents or nuclear weapons testing evolving long-term radioactivity contamination of artificial radionuclides like Americium-241, Antimony-124, Antimony-125, Barium-133, Beryllium-7, Cadmium-109, Cerium-139, Cesium-134, Cesium-137, Chromium-51, Cobalt-57, Cobalt-60, Europium-152, Iodine-129, Iodine-131, Manganese-54, Niobium-95, Ruthenium-103, Silver-110, Strontium-85, Tellurium-127, Tin-113, Yttrium-88, Zinc-65 and Zirconium-95.

Sample Weight Required: 300 g (mL)

Method Reference: ISO 11929
ISO 18589-3

Analytical Platform: Canberra gamma spectrometer with high purity germanium detector



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Special Information: Quantitation Limits are calculated by the analytical software and take into account factors such as the sample weight used, age of product and half-life of the radionuclide

Analyte Reported	Alias	Unit of Measure	Limit of Quantification	Reproducibility
Potassium - 40		Bq/kg	CALC	$\leq 30\%$
Cesium - 134		Bq/kg	CALC	
Cesium - 137		Bq/kg	CALC	$\leq 3.6\%$
Iodine - 131		Bq/kg	CALC	