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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.

Please note: any quantifiable detection above the calculated quantitation limit may be subject to additional fees to ensure proper radioactive disposal of the sample. If this is applicable to the sample submitted, the customer service team will reach out with a cost estimate/ quote that will be the responsibility of the submitter to cover.

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	