

Radium analysis Ra-226, Ra-228 - STUK

Radium

Measurement	Liquid scintillation counting Gamma Spectrometry
Method used for matrices	Environmental Water Terrestrial Air (particles) Biological Foodstuff Industrial products Swipe filters
Separation Method	No separation
Radionuclide(s)	Ra-226 Ra-228
Quantity of sample used (in kg, l, ...)	0.04 for Ra-226, 2L for Ra-228 (water)
Counting time for the method	3 hours for Ra-226, 16 hours for Ra-228
MDA of the technique	0.00004 Bq/sample for Ra-226, 0.14 Bq/sample for Ra-228
FWHM (Energy MeV)	-
Method Evaluated	No
Method Accredited	Yes
Procedure	

Radium (Ra-226)

Ra-226 activity is calculated from the gross alpha spectrum on the basis of the counts measured in window set on the area of Po-214 peak. This will give quite accurate results to Ra-226 because no other natural or artificial radionuclides have alpha emissions on the same energy range. The counting efficiency of Po-214 (and thus of Ra-226) in the selected window is between 80 - 86%. The lower limit of detection for Ra-226 is 0.01 Bq/l at 95% confidence level for 0.038 litre water and 180 minute counting.

