

# Radon analysis Rn-222 - STUK

## Radon

<b>Measurement</b>	Liquid scintillation counting
<b>Method used for matrices</b>	Water
<b>Separation Method</b>	No separation
<b>Radionuclide(s)</b>	Rn-222
<b>Quantity of sample used (in kg, l, ...)</b>	0.01 L
<b>Counting time for the method</b>	1 hour
<b>MDA of the technique</b>	0.0017 Bq/sample
<b>FWHM (Energy MeV)</b>	-
<b>Method Evaluated</b>	No
<b>Method Accredited</b>	Yes
<b>Procedure</b>	

## Description of the method

Radon is measured in a homogeneous solution with a liquid scintillation spectrometer 1414 Guardi-anTM (PerkinElmer). The sample is prepared by adding 10 ml of water into a glass vial (equipped with a cap containing an aluminium foil) pre-filled with liquid scintillation cocktail Ultima GoldTM XR (Packard). The concentration of Rn-222 is calculated from the alpha spectrum in the window, which covers the most part of the alpha peaks. The alpha counting efficiency of radon in the selected alpha window is between 260 - 290%. Repeatability of the method is 4%.

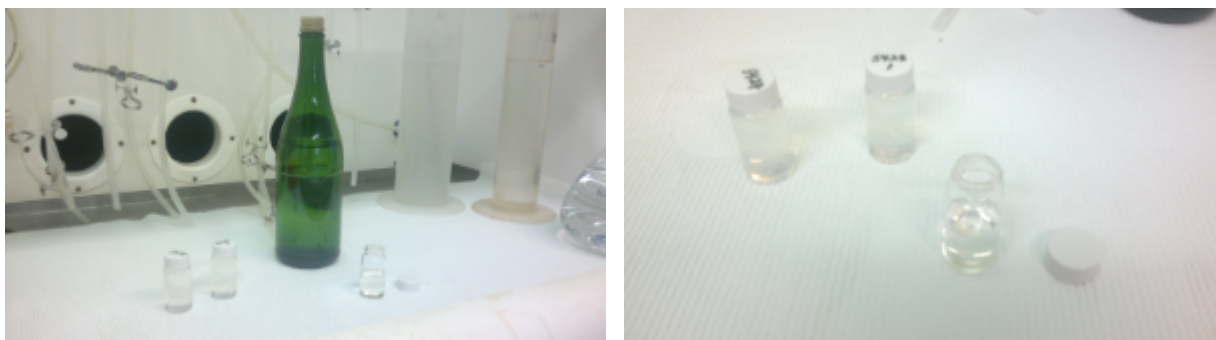


Figure 1. Radon samples.

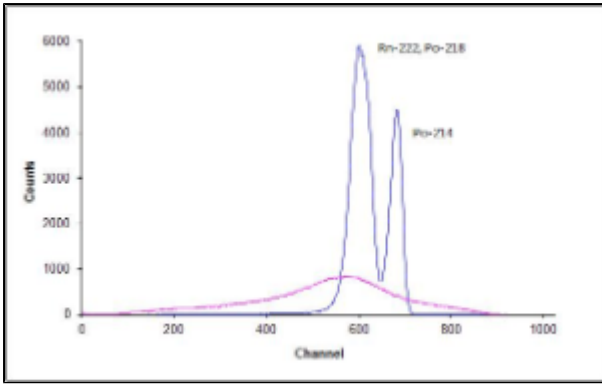


Figure 2. Rn-222 spectra of the water sample.

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