

LSC in Practice

Radon Counting in Water

Problem

A researcher wished to recover and count radon in water. His current procedure involved shaking 50 mL of toluene with 1 liter of water in a 2 liter flask and, after allowing the phases to separate, counting the toluene.

This researcher hoped to find a safer cocktail than toluene for the radon extraction step.

Discussion

The extraction of radon from water relies on the fact that radon is more soluble in organic solvents than in water.

If an emulsifying cocktail is added to a large volume of water, a white emulsion will be formed which will not separate into two distinct layers, thus disrupting the extraction and recovery of the radon. In addition, water

soluble radionuclides, such as radium, will interfere with radon counting.

PerkinElmer's High Efficiency Mineral Oil Scintillator (part number 6NE9579), was specifically developed for radon counting applications and provides the user and the laboratory with a safer substitute for toluene in this procedure.

As an alternative, PerkinElmer's Insta-Fluor™ Plus (part number 6013127) is also suitable for a majority of radon in water applications.

Recommendation

We recommend the use of PerkinElmer's High Efficiency Mineral Oil Scintillator.

PerkinElmer, Inc.
940 Winter Street
Waltham, MA 02451 USA
Phone: (800) 762-4000 or
(+1) 203-925-4602
www.perkinelmer.com



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