

# Air Sampling

**ACADs (08-006) Covered**

**Keywords**

**Description**

**Supporting Material**

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**IRAD 2371 Lab #11**  
Radiation Measurements II

**Air sampling**

**Objective:** To become familiar with calculating concentration of air borne radioactivity

**Materials:** air sampler, filter, calculator, information sheet, alpha/beta counter

**Procedure:**

- a. Load filter into air sampler
- b. Collect air sample, refer to information sheet to determine parameters for air sample
- c. Determine the total volume of air that has passed through the filter
- d. Count alpha and beta standard in counter, determine efficiency for each type of radiation
- e. Count the filter on the alpha/beta counter, determine the activity on the filter in microcuries for both alpha and beta radiation.
- f. Calculate the concentration of alpha and beta radiation in the air sample in microcuries per milliliter.

Answer the following questions;

- g. Why does one use the average flow rate when calculating the total volume of air passing through the filter?
  
  
  
  
  
  
  
  
  
  
- h. What happens if you use only the start volume rate of the air sampler?

### Group 1

Start rate;	40 l/min
End rate;	30 l/min
Start time;	8 am Nov 8, 2010
End time;	5 pm Nov 12, 2010

### Group 2

Start rate;	35 l/min
End rate;	27 l/min
Start time;	12 am Nov 1, 2010
End time;	12 am Nov 8, 2010

### Group 3

Start rate;	40 l/min
End rate;	26 l/min
Start time;	8 am Nov 12, 2010
End time;	8 am Nov 15, 2010