



# Safety Services

## Wipe Testing

In order to comply with current practice in radiation protection, it is required of the users of tritium to take routine wipe tests to check for any possible contamination.

### Method

A 6cm Whatman GF/A filter paper ( or other suitable alternative - check counting efficiency) is folded to form a small pad. This is then moistened with distilled water, held with tweezers and the area to be tested is then wiped. It is usual to wipe approximately 100sq cms. This can be done by wiping a 10cm x 10cm square or a straight or random transect of approximately 50cms in length (pad should be approximately 2cms wide). The filter paper is then put in a vial of scintillant and is ready for counting.

**NB** Your scintillant needs to be able to take aqueous samples or you will have to either do a dry wipe or use a solvent which will mix with the scintillant. Alternatively a wipe can be carried out using the scintillant itself but check first that it does not attack surface finishes.

### Results

In analysing the results, it is assumed that the wipe test takes 10% of contamination and that 100sq cms are sampled.

$$\begin{aligned} &\text{therefore for } 37 \text{ Bq cm}^{-2} \\ &\text{should detect } 37 \times 0.1 \times 100 \text{ dps} \\ &= 370 \text{ dps} \\ &= 22,000 \text{ dpm} \end{aligned}$$

A record should be kept of the results of the wipe tests.

### Action to be taken on results

- a. >220 dpm <22,000 dpm - clean if practical, importance of removal dependent upon nature of work. Remember it is important to keep contamination as low as reasonably achievable.
- b. >22,000 dpm - clean as soon as possible and remove as much contamination as reasonably practicable. Look into possibility of other items being contaminated.

## **Where to Wipe?**

The most obvious places are bench tops adjacent to where work took place. Also, anything that could have been accidentally handled, e.g. fridge doors, cupboard fronts, automatic dispensers or pipettes, etc.

## **How often to Wipe?**

This is at the users' discretion, but should be carried out according to the amount and frequency of experiments, e.g. if experiments are once every 3 months, after each experiment has finished would be sufficient, but if the work was continuous for a period of time, then making tests once per week would be more prudent.

When work is in progress in a non-designated area then a minimum of a monthly survey should be performed and in a supervised or controlled area a minimum of a weekly survey should be performed.

If you have any difficulty in removing contamination or require further information on wipe tests or monitoring in general, do not hesitate to contact Safety Services for help and advice.