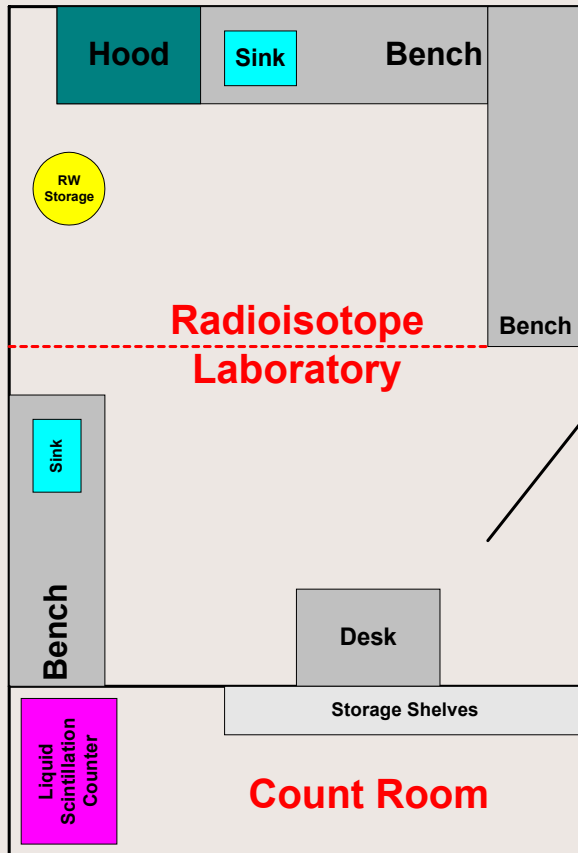


The image shows the cover of a spiral-bound notebook. The cover is a light beige or tan color with a fine, woven fabric texture. On the left side, there is a silver metal spiral binding. The text is centered on the cover in a black, serif font.

# Setting Up A Radioisotope Laboratory

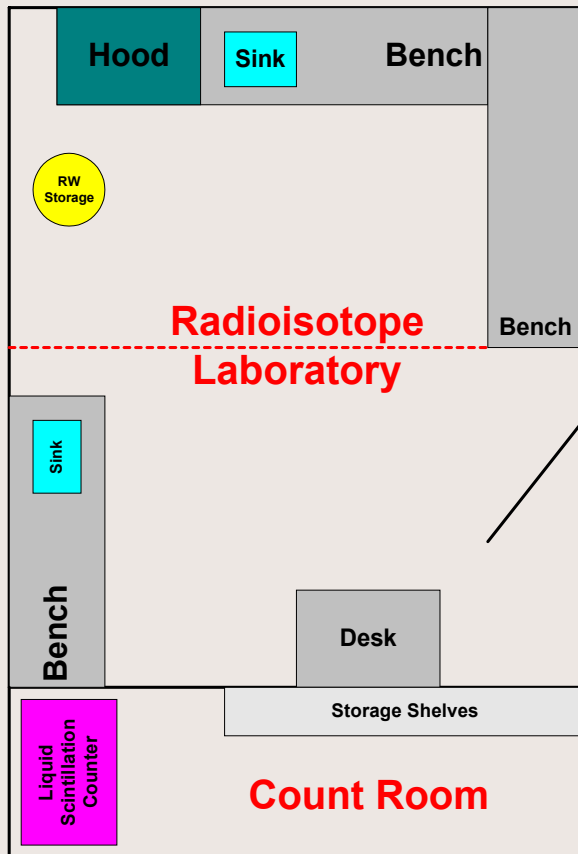
Training Notes for URI Radiation  
Workers

# Model



For this discussion, we will use a typical radioisotope laboratory with an adjacent count room.

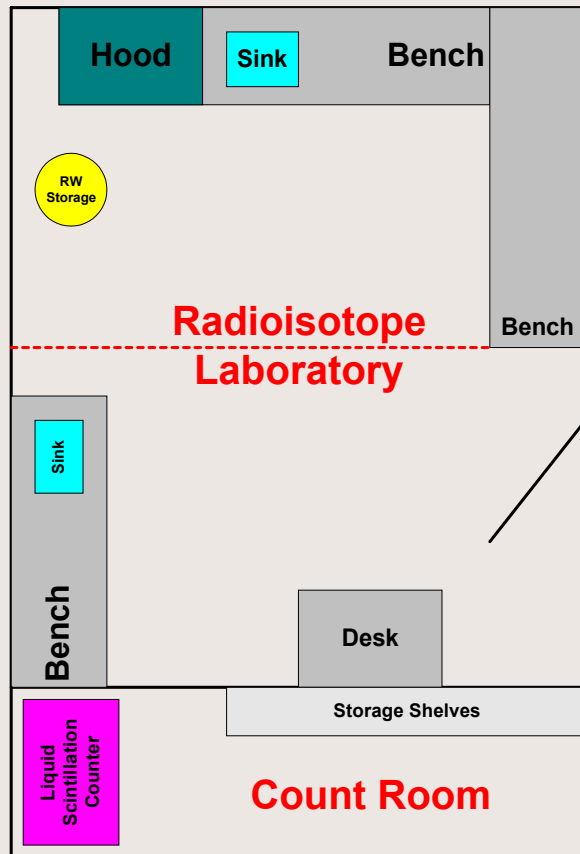
# Radioisotope Laboratory



The radioisotope laboratory is a conventional chemical laboratory.

It has adequate ventilation, a working fume hood, and polished, easily cleaned, non-absorbing surfaces.

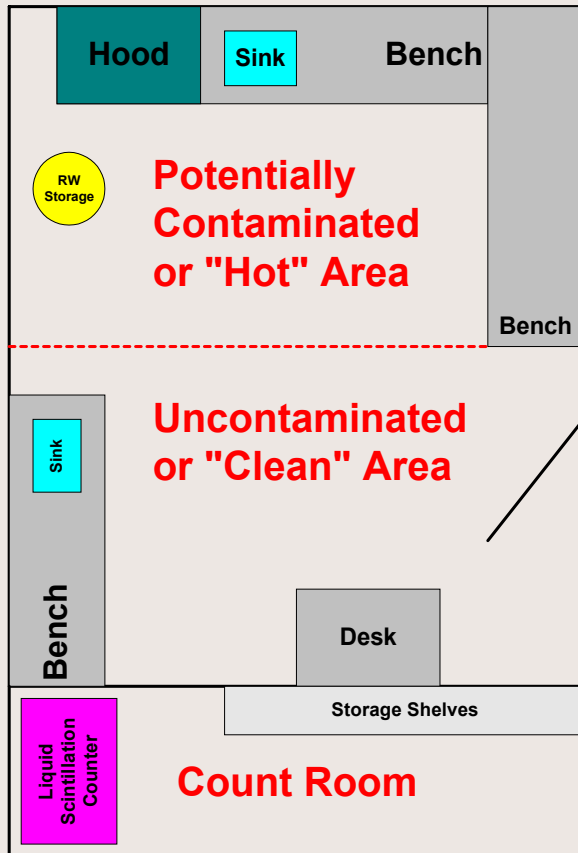
# Count Room



The count room is a separate small laboratory.

It has adequate ventilation, easily cleaned, non-absorbing surfaces and a liquid scintillation counter.

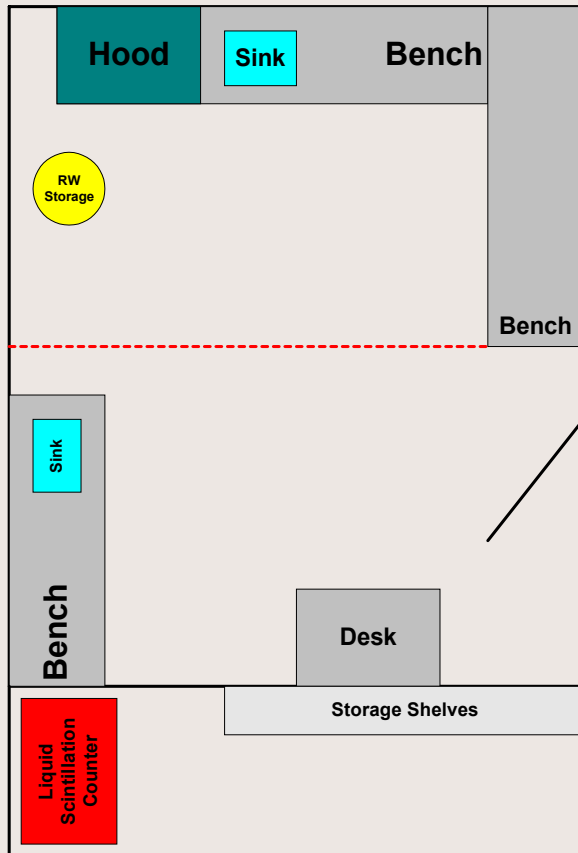
# Set Up The Laboratory



Separate work areas into potentially contaminated and uncontaminated areas.

Maintain a clear distinction between the two areas.

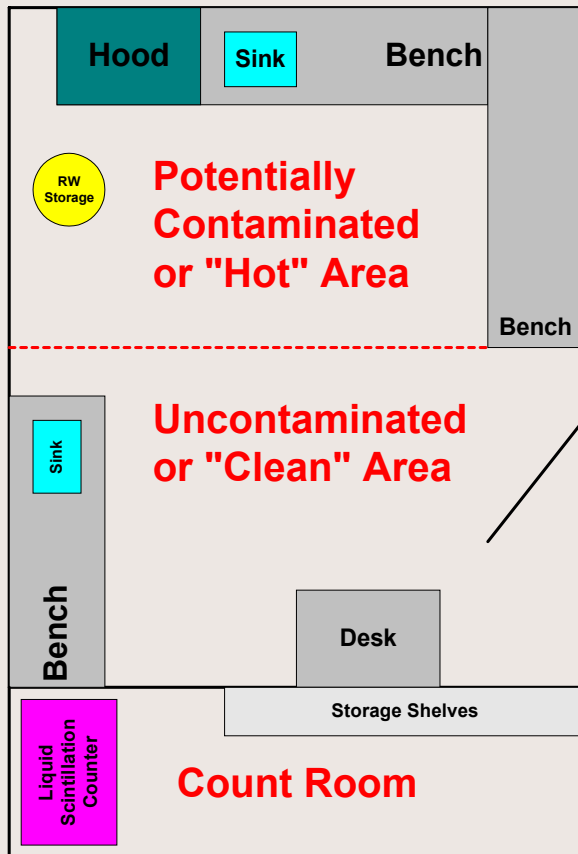
# Counting Equipment



Position counting equipment away from radioisotope storage and handling areas.

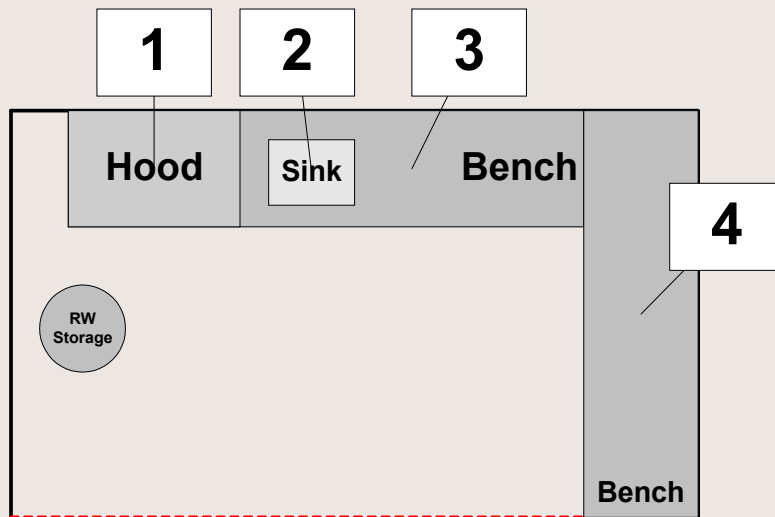
Avoid contamination in or on the counting equipment.

# Control Radioactive Materials



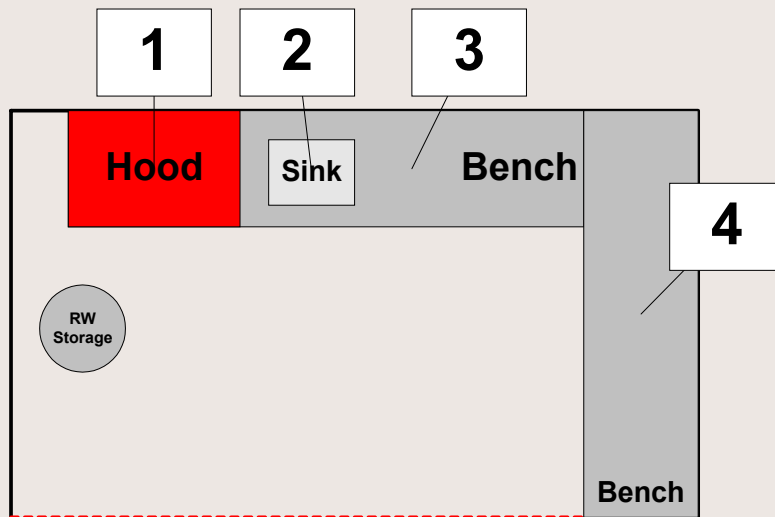
Plan to conduct your work with radioactive materials within the potentially contaminated or "hot" area to prevent dispersal or exposure beyond that area.

# Basic Radioisotope Work Areas



1. Fume Hood
2. “Hot” Sink
3. “Hot” Bench
4. Sample Preparation Area

# Fume Hood

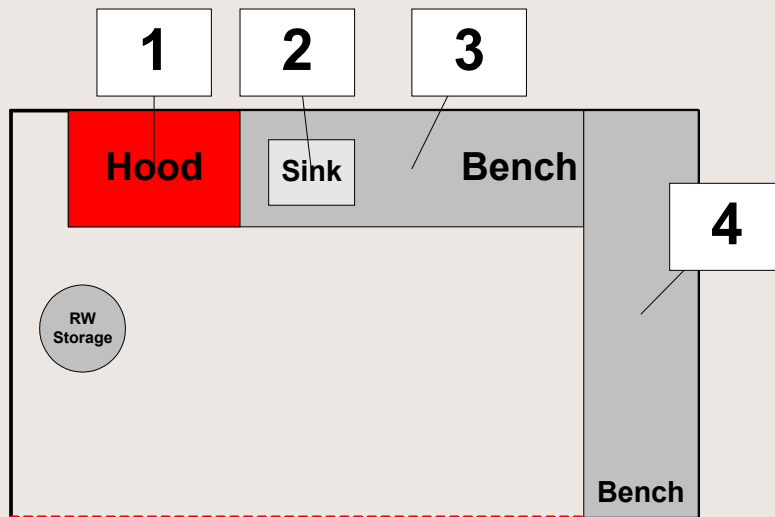


Routine use of a working fume hood will minimize your intake of radioactive materials.

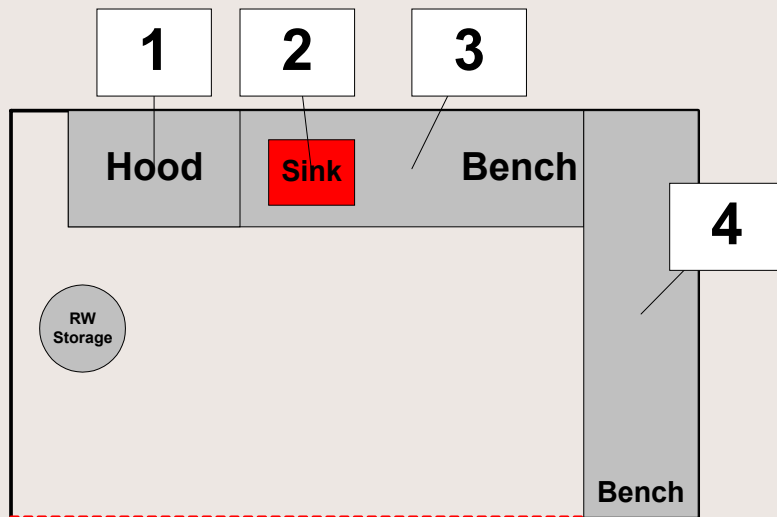
Plan to use the hood to avoid inhalation exposures.

# Fume Hood

Use the fume hood for work with large activities (hundreds of microcuries to millicurie activities).



# “Hot” Sink

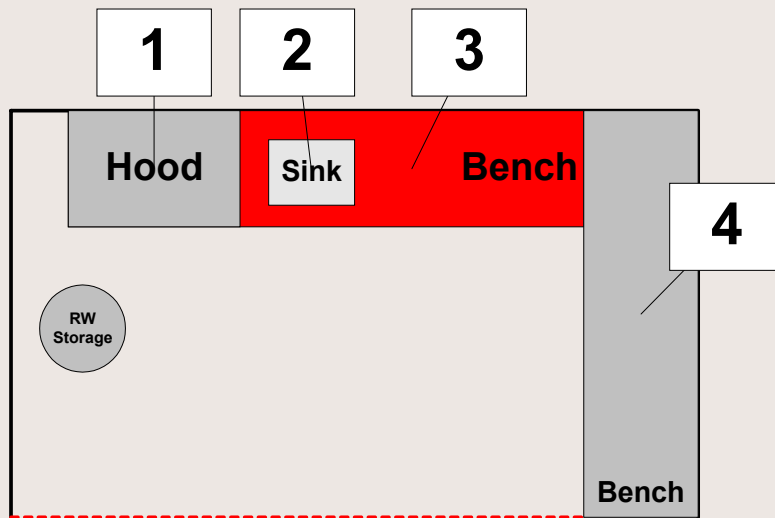


Designate a sink to wash contaminated glassware.

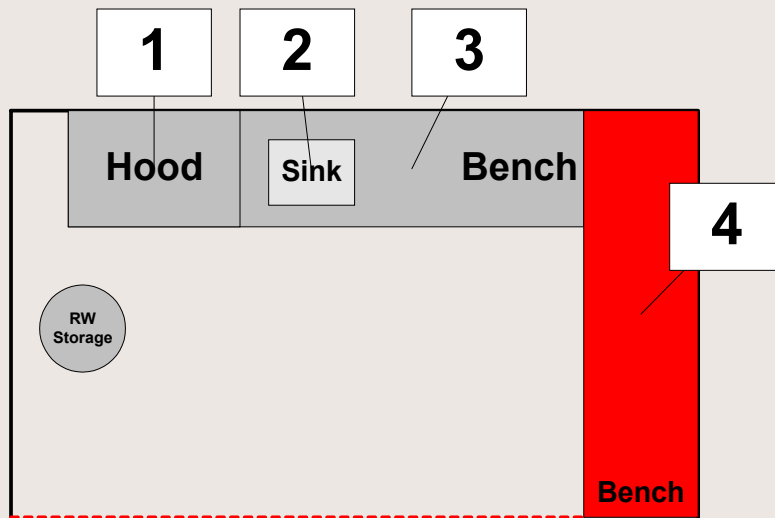
Use a sink in an uncontaminated area to wash your hands, make your coffee, etc.

# “Hot” Bench

The “hot” bench should be used for low activities, (on the order of microcuries or less).



# Sample Preparation Area



Designate an area on the bench for preparing samples for counting.

Decontaminate the area frequently to avoid contaminating your counting equipment.

# Label Containers



**Caution - Radioactive Material**

**Radioisotope: P-32**

**Activity: 155  $\mu$ Ci**

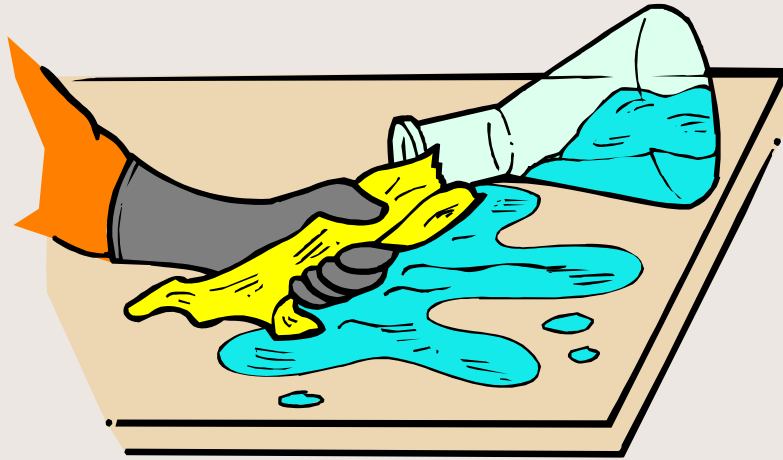
**Assay Date: 11/14/98**

**Chemical Form: ATP**

Conspicuously label all radioactive materials and samples.

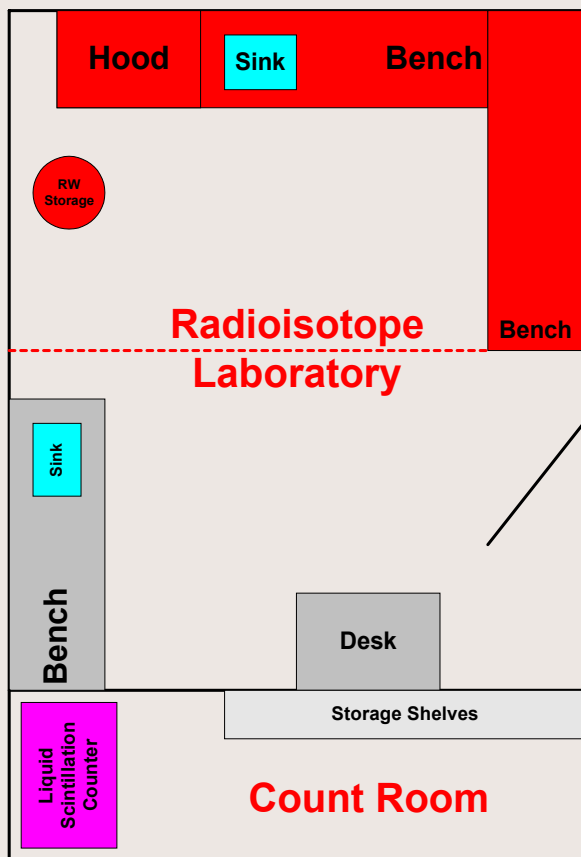
Include the radioisotope, its activity, the date on which the activity was assayed, and its chemical form.

# Spill Trays



Use spill trays under any vessel or piece of equipment which may leak, burst, or spill radioactive liquid.

# Contamination Control



Cover the bench and other work areas with absorbent coverings to confine contamination.

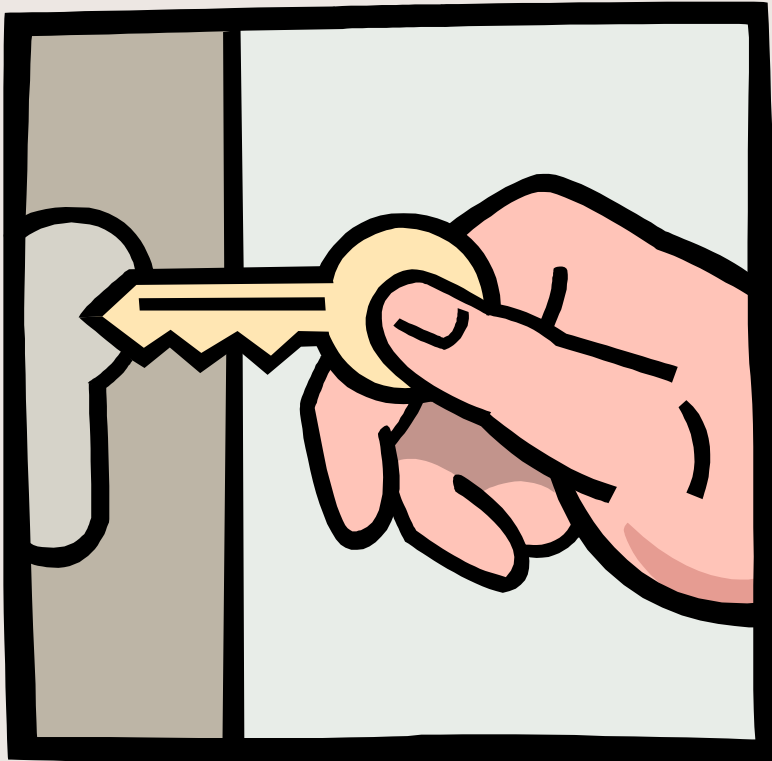
Place a tray under the radioactive waste container.

# Housekeeping

1. Clearly distinguish contaminated areas from uncontaminated areas
2. Mark and label contaminated areas and items
3. Minimize the build-up of contamination



# Security



All areas of the department in which radioactive materials are stored should be locked at all times other than when under the direct supervision of laboratory personnel.