

Radioactive Substances used for Science Activities



Some schools, normally high schools, may have radioactive sources on site that are used, or have been used in the past for science experiments. The products are safe if stored correctly and the container remains intact. Discuss the following with your relevant Head of Department, Senior Teacher or Science Operations Officer.

Are there alternatives to using radioactive sources?

Schools wanting to demonstrate the concept of radioactivity, without storing a radioactive source at school can use a completely safe simulator which is available from science supply companies for approximately \$200.

If using radioactive sources, what should schools do to ensure the safe use of these products?

1. Check if your school has radioactive sources on site.

- Check entries in science equipment and chemical registers, contents of the school safe/s, storage areas in science laboratories and other store rooms for containers with any of the following labeling:
 - "radioactive", "science department"
 - The name or symbol of an isotope and its mass number. E.g. "Strontium 90", "Sr90", "Cobalt 60", "Co60", "Caesium 137", "Cs137", "Polonium 210", "Po210", "Radium 226", "Ra226", "Americium 241", "Am241".
 - "for use with a Geiger counter" e.g. 
 - "danger" or 
 - The source itself may be wrapped in lead inside the box.

2. Determine if your school needs to keep the radioactive sources.

- Verify how often and how recently any sources have been used:
 - Ask Science Teachers, Science Operations Officers, check experiment requests or equipment logs;
 - Determine how often the product is accessed: there will be a limited number of people who can open the safe so you can check if, and when, the radioactive source has been retrieved;
 - Check associated equipment: check the science asset register, or with the science department regarding any records of a Geiger counter or other radiation detectors. If there is no record of access to sources or detectors, it is unlikely that any sources or equipment are used.

3. If it has been determined through consultation with the principal and science department representative that the product is to be kept :

- Contact Radiation Health by completing the 'Radioactive Material Questionnaire'** (see page 2 of this fact sheet). This questionnaire was developed by Radiation Health to gather background information and assist with providing your school with appropriate advice.
- If radioactive sources are kept at your school you will need to comply with the *Radiation Safety Act 1999* and *Radiation Safety Regulation 2010*. This may include among other requirements; the school gaining a possession licence, developing a radiation safety and protection plan, appointing a Radiation Safety Officer; obtaining a certificate of compliance (issued by an accredited person) for the premises where sources are stored or used providing in-house radiation safety training and keeping and maintaining appropriate records.
- Schools should also refer to the *Safety Guide for Use of Radiation in Schools Part 1: Ionizing Radiation*, published by ARPANSA, for practical advice and guidance about the use of radioactive sources (available at www.arpansa.gov.au/publications/codes/rps18.cfm)

What if our school wants to dispose of the radioactive sources?

Radiation Health can also provide advice on disposal options for schools. Once again it is important to **complete the attached questionnaire** and return it to Radiation Health. Continue to store the sources securely until disposal.



Radioactive Material Questionnaire

Please complete the questionnaire and fax back to Radiation Health (fax: 3328 9622)

Name of School:	Location Code:
Street Address:	
Contact Person:	Phone No:

Is your school in possession of any radioactive material? Yes No

If 'yes' please provide details below. Include any geological samples that you know to be radioactive. See over for examples of what the radioactive material may look like.

An officer of Radiation Health will contact you to discuss options for keeping or disposing of your radioactive material.

Radioactive Material	Activity on Label (if any)	Physical Condition

Do you wish to dispose of any radioactive material in your possession? Yes No

Do you wish to keep your radioactive material and use it for teaching? Yes No

Signature (Principal/Officer in Charge)

Date

The radioactive material may look like one of these:

Clear or coloured disc (Co60, Sr90, Am241, Cs137, etc)



Clear block with metal strip (Ra226)



White powder in plastic bottle



Geological samples (Uranium or Thorium ores)

It may be packaged like this:

Thin matchbox-type container



Small cardboard box



Lead foil



The radioactive material or package may have a label like this:

