



*Successful Device Approvals*

## **LEAK TEST KIT INSTRUCTIONS**

Please read and follow the directions **carefully**. If there is something you do not understand **DO NOT** attempt to conduct the leak test. Contact IRSC at 877.266.0794 for assistance.

### Radioactive Source and Device Leak Test Instructions:

The IRSC, Inc. Leak Test Kit can be used to meet your regulatory requirement to detect removable contamination from your radioactive sources or devices. Before performing the leak test, your company's radiation safety procedures should be reviewed, the radiation safety officer should be consulted and the device manufacturer's leak test instructions should be read, as applicable.

### Safety Protocols:

When testing sources, the ALARA principles should be followed, by 1) assuring that the time spent near the source is minimized, 2) keeping the maximum distance between the person and the source using handling tools if necessary, and 3) the proper shielding, (including shutters or similar devices), is installed to reduce the exposure to the person. For devices, be sure to wipe areas closest to the source, inlet, outlet, and seal areas, or areas listed in the device's instruction manual. When performing the leak test, disposable gloves should be worn, and discarded immediately after use.

You may choose to perform a wet or dry leak test. There are different scientific opinions as to which is the preferred method. Many of our clients choose to perform dry tests.

### Leak Testing Instructions:

Record the radionuclide, activity, model/serial number of device, and the serial number of the source. Note that some devices will only list the model and serial no. of the device.

Choose the appropriate leak test procedure to follow from the three listed below:

### Alpha Emitting Sources:

Handle with extreme care. Never touch the surface of the source while conducting the leak test as this will damage the source. Only wipe the source holder and support. Be sure that you DO NOT wipe the surface of the source.

### Beta Emitting Sources:

Beta emitting sources in excess of 1 mCi must be handled with forceps or 12 inch tweezers. The leak test should be performed behind a plastic shield with a thickness of at least 1 cm. Wear disposable gloves to prevent contamination. Be careful to not puncture thin covers that may be protecting the source. Wipe surfaces of the support such as storage cases, support rings, or holders. Keep sources at maximum distance from you at all times and never expose yourself to direct radiation. If the source is permanently fixed into the device, the most easily accessible/closest surface (such as a conical port source housing etc.) may be used as the smear area. DO NOT remove sources from holders. Electron capture detectors should be leak tested by wiping the outside of the source housing and the carrier gas inlet and outlet port.

### Gamma Emitting Sources:

Only use this kit to test gamma emitting sources if the entire body exposure will not be greater than 1 mRem. This test can be used for unshielded Cobalt- 60 sources up to 40 mCi and unshielded Cesium- 137/Iridium-192 up to 150 mCi. Do a "dry run" first to find out the time it should take to obtain the sample. The time should take less than 30 seconds. Wear disposable gloves to prevent contamination. Always use tongs, tweezers, handles or forceps that are at least 12 inches in length. Work with your arms fully extended to minimize the amount of radiation dose to the body. Always return sources to their shielded storage containers as soon as possible. When testing gamma emitting sources that have higher activity, you must wipe the closest accessible surface of the source without being exposed to any direct radiation from the source. Always use a calibrated survey meter to assess possible exposure levels from high activity sources while leak testing.

If performing a wet test, remove the swab and towellette from the package. Open the towellette and moisten the cotton tip of the swab

Wipe the area of the device or source.

Wait for swab to dry. If available, monitor the swab for high activity level with a survey meter that has a thin window (G-M detector). If the activity is 50% more than background radiation, contact your company's RSO immediately.

Open the plastic envelope and place the swab inside the bag. Be careful not to touch the swab to the outside of the bag or your gloves.

Seal the bag and complete the information on the reverse side of this form

Place in the provided envelope and mail the test kit to:

Mitchell Galanek  
77 Massachusetts Avenue  
Room N52-496  
Cambridge, MA 02139

The above address is our contracted laboratory for analysis (MA license no. 13-3021) and samples may only be mailed or dropped off at this location. Do not mail or drop off samples to IRSC, Inc.

A notice of the next required leak test of your source(s) will be sent to you one month prior to the date of the required test.



## Leak Test Data Form

Leak Test Kit Tracking No: \_\_\_\_\_

### Company Information:

Company Name: \_\_\_\_\_

Tested By: \_\_\_\_\_

Phone:

Fax: \_\_\_\_\_

E:mail:

Address:

City:

State:

Zip:

### Test Information:

Date of Test:

Isotope:

Original Activity:

Test Method (circle one):    Wet

Dry

Assay Date (if applicable): \_\_\_\_\_

Source Model No:

Source Serial No.:

Device Model:

Device Serial No.:

VOLUME DISCOUNTS AVAILABLE

Updated 4/26/2009