

University of California, Berkeley
Office of Environment, Health & Safety - Radiation Safety

Radiation Use Authorization

RUA Number: **3271 -- Radioactive Materials -- Active** HGV: 579.12110 Class: II Survey Frequency: **Semi-Annual**

RUA Holder: **Donald J. ORLANDO** - Department: **Physics** Amendment Number: 1 Revision Number: 17
 phylabs@berkeley.edu - +1 510 642-5328

Expiration: **07/31/2018**

Location(s): LeConte Hall: 286

Lab Contact(s): Donald J. ORLANDO - +1 510 642-5328 - phylabs@berkeley.edu ;

Personnel: Amin Jazaeri; Donald J. ORLANDO *;
** indicates personnel who are specifically required to use dosimetry.*

Radionuclide Limits

Radionuclide	Chemical Form(s)	Physical Form	mCi/Expt.	mCi/Vial	mCi Poss	mCi/Year
Co60	Two sources in epoxy matrix	Solid	0.30000	0.30000	1.00000	1.00000
Sr90	sealed source	Solid, Liquid, Gas	10.00000	10.00000	20.00000	20.00000
Na22	Two sources; 1 in epoxy matrix, 1 disc	Solid	0.30000	0.30000	1.00000	1.00000
Mn54	Four sources	Solid	0.20000	0.20000	0.40000	0.40000
Cs137	sealed sources	Solid, Liquid, Gas	2.50000	2.50000	4.00000	4.00000
Am241	Five unsealed sources	Solid	0.26000	0.26000	0.61620	0.61620
Fe55	Three sources	Solid	5.00000	5.00000	11.53450	11.53450
Co57	Four unsealed source	Solid	8.00000	8.00000	40.00000	40.00000
H3	source	Solid	0.11100	0.11100	0.11100	0.11100
Ag110m	foil in brass housing	Solid	0.11100	0.11100	0.11100	0.11100
Ra226	sealed source	Solid	0.10000	0.10000	0.10000	0.10000

Experiment Description

[Mixed Isotopes] Class Experiments 1-11-14

- 1) Use and storage of solid and sealed radioactive sources in the study of various laws of physics for Physics 111 Lab.
- 2) Perform source insertion, decontamination, repair, and/or maintenance of beta chamber

Precautions Required

The following protection items are required: Lab Coat, Disposable Gloves, Eye Protection Equipment, and if marked, the following:

- | | | | | | | |
|--|--------------------------------------|---------------------------------------|-------------------------------------|--|--|--------------------------------------|
| <input checked="" type="checkbox"/> TLD Ring | <input type="checkbox"/> Body Badge | <input type="checkbox"/> Thyroid Scan | <input type="checkbox"/> Urinalysis | <input type="checkbox"/> Neutron Badge | <input checked="" type="checkbox"/> G-M Meter | <input type="checkbox"/> Scint Probe |
| <input type="checkbox"/> Neutron Meter | <input type="checkbox"/> Alpha Probe | <input type="checkbox"/> Ion Chamber | <input type="checkbox"/> IC | <input type="checkbox"/> E/D Exception Granted | <input checked="" type="checkbox"/> () ACUC Protocol | |

1. Compliance: With provisions/requirements of UC Berkeley's RSM, approved SOPs, and the campus policy on food & beverages in laboratories (<http://campuspol.chance.berkeley.edu/policies/foodinlabs.pdf>).
2. Dosimetry: Rings required when handling sources > 1 mCi. Handle, store, and return dosimeters at specified frequencies. Notify EH&S of lost dosimeters. Dosimeters may be issued for classroom work at RUA Holders request and follow both EH&S and Physics' requirements. Contact EH&S for assistance with classroom dosimetry. Classroom dosimetry is required to be returned at the end of the class period.
3. Inventory: Keep radioactive sources in secured, properly shielded, and labeled locations to prevent unauthorized removal. Do not leave radioactive sources unattended unless in a posted experiment. Ensure that all users maintain the radioactive materials inventory in RSIS and make timely updates of use, disposal, and/or transfer of these materials. Make sealed sources available for semi-annual leak tests and perform semi-annual inventory of all sources as required.
4. Surveys: Have available a portable G-M survey meter while working with sources. Survey personnel (hands, shoes, lab coat) and work areas (floor, bench, equipment, etc.) for loose contamination during and immediately after working with sources. No routine self-surveys are required.

Certification

<i>All work will be performed with the precautions specified.</i>		<i>Radiation use is approved with the required precautions.</i>	
Signed RUA on file at RS		Signed RUA on file at RS	
RUA Holder	Date	Radiation Safety Officer	Date
Signed RUA on file at RS		Signed RUA on file at RS	
Department Chair	Date	Radiation Safety Committee	Date

Rev Date 07/12/2017 *FOR ASSISTANCE, CALL EH&S - RS (359 U-HALL MC1150) AT 2-3073 or FAX 3-9495* Last Update 07/12/2017