

APPLICATION FOR POSSESSION AND USE OF RADIONUCLIDES

URSC (060199) EXPIRATION DATE
Form 99 (Safety Dept. Use Only)

Complete all applicable items and sign application on page 5. Refer to the Radiation Safety for Radiation Workers (RSRW) manual, or call a Health Physicist at the Safety Department for assistance completing this application. Make one additional copy to keep for your records and send the original to the Safety Department.

Please type or print in ink. Do not use pencil.

1. **Applicant** - Name: _____
 New radionuclide applicants must also submit Form 99, **APPLICATION FOR POSSESSION AND USE OF RADIONUCLIDES**

College/Department/Division _____

Campus Address: _____ Building _____

Office: Rm. _____ Phone _____ Fax _____

E-Mail Address: _____

2. **Type of Application**

- New** - If currently not authorized to possess radionuclides at UW, complete **all** items.
- Amendment** - Perhaps the **Minor Change to Nuclide Authorization Form** is more appropriate.
- Renewal** - Required every three years, complete **all** items; pg. 4, Training / Experience is **optional**.

3. **Nuclides** - Complete table for each nuclide, generic descriptions (e.g., amino acids, sugars, etc.) are acceptable.

Radionuclide	Chemical Form(s)	Physical Form ¹	Order Limit (mCi) ²	Possession Limit (mCi) ³

¹Physical Form - solid (S), liquid (L), gas (G), or sealed source (SS)

²Order Limit - the maximum activity needed per order (vial, kit, etc.)

³Possession Limit - the maximum activity on lab's inventory at any time

4. **Source of Nuclides** - Check each source you may use for obtaining radionuclides. The University's NRC license requires all commercially produced radionuclides be ordered through CORD.

- CORD UW Cyclotron UW Reactor (**complete and submit UWNR Form 134**)
- UW Hospital Radiopharmacy Other (specify) _____

5. **Uses** - Besides benchtop research, radioactive materials will also be:

- Administered to or used on humans (in addition, **complete and submit Form 98**).
- Used in vertebrate animals (in addition, **complete and submit Form 99A**).
- Used in a class, Course # _____ (**attach radiation safety training outline**)

6. **Protocol Summary** - Using the **Protocol Summary Sheet** (copy as needed), briefly describe your intended use for **each** radionuclide. **Detailed iodination protocols are required.** Example entries include:
1. Radionuclide: **P-32**
 2. Chemical and Physical Form: **Triphosphates & Orthophosphates Liquid**
 3. Substance is volatile: **YES NO**
 4. Procedure will be performed at Standard Temperature and Pressure (STP) **YES NO**
 5. Protocol: Provide a brief description of the procedure. Also include information on chemical and physical form generated, any special equipment used to handle, shield or contain the radioactivity, and unusual hazards associated with the procedure.
 - a) **Triphosphates for DNA sequencing and transcription**
 - b) **Orthophosphates for cell labeling**
 6. Total Activity Per Experiment. **a) 200 microcuries b) 1 millicurie**
 7. Frequency of Experiment: **a) 4 per week b) 1 per month**
 8. Comments:
 9. Mixed hazardous and radioactive waste or unusual waste will be generated: **YES NO**
(i.e., any chemical, biological, or genetically hazardous material mixed with radioactive waste).
 10. Vertebrate Animals will be used: **YES NO RARC Protocol #: _____**
7. **Rooms** - List all room number(s) and building(s) for radioactive materials use, storage or counting.

Use Rooms / Building(s)		Rooms used <u>only</u> for	
		Counting	Waste

8. **Training** - Personnel working with radioactive materials (including survey and waste personnel) in your radionuclide labs must read the manual *Radiation Safety for Radiation Workers*, attend the training class and pass the radiation exam. What **additional** training / instructions will you give your radionuclide workers (e.g., iodimators, shippers/transporters, etc.) and workers who may be occasionally exposed (e.g., dishwashers, custodians, etc.) to radiation in your lab (see Training & Instruction for Radiation Workers, p. 347)?
- New personnel will be trained in the handling, safe use of radionuclides, in the use of survey meters, wipe tests, and record keeping used in my labs by me or one of my trained personnel.
- Iodimators will be trained according to Section 5.6.b.13 and 3.6.d.
- Shippers / transporters will read Chapter 8 of the manual and submit the required test, biannually.
- Workers will be informed of the Pregnancy Surveillance Program (Section 2.5 & 3.6.e).
- Additional training specific to this lab _____
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9. **ALARA** - What precautions will you take to minimize exposures to your personnel from radioactivity during use or while in storage? Radioactivity will be used and/or stored:
- behind shielding material (type and thickness) _____
-
- in a separate room or area not frequented by personnel.
- in an approved hood for volatile radionuclides (see pg 5, para 2 & 3).
- by personnel wearing protective clothing (e.g., lab coat, disposable gloves, safety glasses, etc.).
- other (specify) _____
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10. **Radioactive Waste** - What method(s) will be used to dispose of your radioactive wastes (Section 5.3)?
- Separation (by nuclide and physical form) and package for pickup by Safety Dept (**preferred**).

- Dilution of aqueous liquids and disposal to the sanitary sewer -- Bldg / Rm # _____.
Requires sink log for each approved sink and < 2 mCi total release per year.
- Release to atmosphere via approved fume hood in Bldg / Rm # _____.
- Decay (**not** recommended -- see Section 5.3.d for requirements).
- Waste generation not anticipated.
- Other (specify) _____

11. **Security / Supervision of Radioactive Materials -**

How will you secure radioactive materials when no radiation workers are in the lab?

- Materials will be stored in a locked cabinet, refrigerator, or freezer (**mandatory** for stock vials).
- Room will be under direct supervision when radioactive materials are present or unsecured.
- Room or building will be locked when lab personnel are not present.
- Other (specify) _____

How will you secure radioactive (yellow bag) waste to prevent loss or theft?

- Waste container will be conspicuously marked, decay waste container / room will be locked.
- Waste will be stored in room not accessible to non-lab personnel (Rm # _____)
- Physical barrier or system will be used (explain) _____
- Other (specify) _____

12. **Radiation Surveys -** At what frequency will your radionuclide rooms be surveyed (Section 5.4)?

- Monthly if my group has a total of 200 µCi in the lab during the month.
- Semiannually if my group has < 200 µCi or, upon written **request**, for radionuclides in storage.
- Immediately following the use and/or opening of 5 mCi vial of radioiodine.
- Other (specify) _____

13. **Survey Meters -** What type of survey meter will you use to measure radiation count rates and / or exposure? Labs using very limited quantities (e.g., < 0.2 mCi per order) or very sporadic use (e.g., once a semester) may borrow (**this is not recommended by Safety**) a sensitive survey meter when using radioactive material. If you borrow a survey meter from another lab, list PI _____ and SN below.

- * GM survey meter, model/SN _____ / _____ / _____
- * Scintillation meter, model/SN _____ / _____ / _____
(Required if using ¹²⁵I (except µCi amounts of bound iodine, e.g., RIA kits), ⁵¹Cr, etc.).
- Not applicable, sealed sources or ³H and / or ⁶³Ni use only.
- * Other (specify) _____

*Survey instruments will be calibrated at least annually by:

- Safety Dept. Other (specify) _____

14. **Wipe Surveys -** What system will you use to count wipe survey samples (see pg 2, para 7 - **Rooms**)?

- Liquid scintillation counting (LSC) -- Bldg/Rm # _____ / _____ / _____.
- Gamma counting (AGC) -- Bldg/Rm # _____ / _____ / _____.
- Not applicable (e.g., only sealed sources, leak tested by Safety).
- Other (specify) _____

Training and Experience

Complete a **Training and Experience** sheet for each co-authorized PI. Lab workers are documented via *Radiation Safety for Radiation Workers* exam.

Training received in basic radioisotope handling techniques

Topics	Where Trained	Duration ¹ & Type ² of Training
Principles and practices of radiation protection.		
Biological effects of radiation.		
Basic calculations for radioactivity measurement and standardization.		
Instrumentation and monitoring techniques.		
Other (describe) -		

¹Duration of training must total a minimum of 40 hours

²Indicate either on-the-job (J) or formal course (C).

Experience - Use of radioactive materials, sources, instruments, etc.

Radionuclide	Activity Used (mCi)		Type of Use	Duration
	avg	max		

Please read before signing:

I agree to abide by all applicable regulations regarding the use of radionuclides as set forth by the State of Wisconsin and the University Radiation Safety Committee (URSC) including, but not limited to, the following:

1. All personnel who work with or in the vicinity of radioactive materials under my authorization, including animal caretakers and students, will be trained in accordance with the Sections 5.6.c V and Training & Instruction for Radiation Workers, p. 347. Novice iodimators should be apprenticed under to an experienced iodimator. I will train other, non-radiation, workers commensurate with their exposure potential.
2. All personnel will wear dosimeters if required (Section 7.2.d & Dosimetry, p. 348). All personnel using tritium or radioiodine will have urine or thyroid monitoring when required by Sections 3.6.d, 5.6.b.1 & 5.6.b.13, as applicable. Pregnant workers will be appraised of the Pregnancy Surveillance Program (Section 3.6.e)
3. Any procedure which may result in the production of airborne radioactivity (e.g., gas, aerosol or dust) in activities greater than 10% of the limits given in Table 3-9, must be performed within a fume hood or other facility approved by Radiation Safety. Radioiodine effluents from hoods must be monitored as specified in the URSR, Section 3.6.b.13.
4. All rooms containing radionuclides will be surveyed in accordance with Sections 5.6.c (e.g., monthly, unless excepted) and 7.5 & 7.7. All areas will be posted and containers labeled in accordance with the Sections 1.3, 3.5.c & 3.5.d. Stock vials will be stored in locked containers (e.g., freezers, refrigerators, etc.)
5. Records of radionuclide receipt, use, and disposal (i.e., inventories) will be maintained as specified in Sections 5.2 & 5.3 and Laboratory 2. Radioactive wastes will be disposed in accordance with Section 5.3.

Signature: _____

Date: _____

University Job Classification: _____

RETURN COMPLETED APPLICATION AND ATTACHMENTS TO:

**Radiation Safety
Safety Department
30 North Murray Street**

