UNIVERSITY OF WATERLOO APPLICATION FOR RADIOISOTOPE PERMIT

# Applicant

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of Applicant: | | | |  |
| Department: |  | | | |
| Phone No. (Ext.): | |  | | |
| Home Phone No.: | | |  | |

# Radioisotope Use

**Buildings and Rooms where Materials are to be Used**

|  |  |  |
| --- | --- | --- |
| Preparation Area | Work Area | Storage Area |
|  |  |  |
|  |  |  |
|  |  |  |

**Open Sources (If applicable)**

|  |  |  |
| --- | --- | --- |
| Isotope | Maximum Vial Size (MBq or mCi) | Maximum Activity in Laboratory (MBq or mCi) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Sealed Source and Devices (If applicable)**

|  |  |  |  |
| --- | --- | --- | --- |
| Isotope | Type of Equipment | Model and Serial No. | Activity  (MBq or mCi) |
|  |  |  |  |
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|  |  |  |  |
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**Statement of Intended Use**

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**Method of Contamination Monitoring (Open Source Only)**

*In addition to description if your lab possesses any monitoring instruments (e.g. Geiger counters) provide manufacturer, model number and serial number.*

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**Previous Radioisotope Use**

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**Radioisotope Purchasing**

Yes  No Do you have special approval on Unit 4 for Radioisotope purchases?

# Permit Holder’s Responsibilities

The permit holder shall insure workers and students under their supervision:

1. Adhere to the conditions stated in the Radioisotope Permit;

2. Work according to the practices stated in the CNSC Radioisotope Safety Poster for Basic Laboratories;

3. Receive radioisotope training;

4. Follow the rules and regulations set out by the CNSC. and the University of Waterloo Radiation Safety Committee;

5. Report incidents of loss or theft to the R.S.O. (Greg Friday ext. 35755)

6. Provide adequate facilities, equipment, and supervision to ensure workers and students follow the rules and regulations set out by the CNSC. and the University of Waterloo Radiation Safety Committee;

7. Maintain inventories of all radioactive materials as well as storage and disposal records;

8. Maintain area monitoring and/or wipe test records;

9. Wear the appropriate radiation dosimetry and participate in prescribed bioassay programs.

# Sign Off

|  |  |  |
| --- | --- | --- |
| Permit Holder Signature: | |  |
| Date: |  | |

# Appendix: Laboratory Classification

A laboratory in which more than one "Exempt Quantity" of a nuclear substance is used will be designated a Basic, Intermediate or High Level.

**Laboratory Designation**

1. Non-Regulated if the total quantity of radioisotopes stored or used does not exceed the Exempt Quantity Limit for the radioisotope
2. Basic Level laboratory if the largest quantity of radioisotopes stored or used does not exceed 5 ALI.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Vial size limits for the various classifications of labs** | | | | | |
| Isotope | Exempt Quantity  MBq | Exempt Quantity  uCi | ALI estimate (ingestion) MBq/year | Vial limit size for a  Basic Level  (5 x ALI) | |
| mCi | MBq |
| H – 3 | 1000 | 27000 | 1,000.00 | 135.00 | 5,000.00 |
| C – 14 | 100 | 2700 | 34.00 | 4.59 | 170.00 |
| Na – 22 | 0.01 | 0.27 | 6.00 | 0.81 | 30.00 |
| P – 32 | 0.01 | 0.27 | 8.00 | 1.08 | 40.00 |
| P – 33 | 1 | 27 | 80.00 | 10.80 | 400.00 |
| S – 35 | 100 | 2700 | 26.00 | 3.51 | 130.00 |
| Cl – 36 | 0.01 | 0.27 | 20.00 | 2.70 | 100.00 |
| Ca – 45 | 1 | 27 | 20.00 | 2.70 | 100.00 |
| Cr – 51 | 1 | 27 | 530.00 | 71.60 | 2,650.00 |
| Fe – 59 | 0.1 | 2.7 | 10.00 | 1.35 | 50.00 |
| Zn - 65 | 1 | 27 | 5.00 | 0.67 | 25.00 |
| I – 125 | 1 | 27 | 1.00 | 0.135 | 5.00 |
| I – 131 | 0.01 | 0.27 | 1.00 | 0.135 | 5.00 |