

LA TROBE UNIVERSITY

GUIDELINES FOR RADIOACTIVE WASTE DISPOSAL

PACKAGING AND LABELLING

All radioactive waste must be packaged so that it will not be released or spilled under normal handling conditions. Solid waste should be packaged in strong, opaque plastic or wet bags and securely fastened at the top. Liquid waste should be contained in suitable non-corrosive containers and must be transported in suitable carry frames or containers that can withstand breakage.

All radioactive waste packages must be labelled with the following:

- Isotope
- Type of waste (chemical composition, waste material, etc)
- Estimated activity and reference date
- Department and laboratory
- Person responsible

Forms for radioactive waste are provided below.

UNIVERSITY RADIATION WASTE STORES

The University maintains a Radiation Waste Store at the Bundoora Campus, which is located at Room 150, Physical Sciences 4 Building. Waste can be deposited into the store on Wednesday afternoon at 3.45 or at other times by arrangement by contacting the OHS Section on telephone 9479 2186.

The Bendigo Campus also has a storage area in which radioactive waste can be stored for decay or prior to removal by a licensed contractor. This store is controlled by the School of MTE and is located in the Physical Sciences 2 Building.

REGULATORY REQUIREMENTS

Victorian Health (Radiation Safety) Regulations 1994
NH&MRC Code of Practice for the Disposal of radioactive wastes by the user (1990).

RADIOACTIVE WASTE DISPOSAL – SUMMARY

Waste type	Disposal method	Limits
Solid radioactive waste, including contaminated disposable articles, material or consumables.	Package into strong plastic bags (red preferred but black is acceptable) and remove to the radiation waste store. Bags must be fastened to withstand normal handling conditions	The total activity per bag must be less than: 4 MBq (100uCi) for: H-3, C-14, P-32, P-33, S-35, Cr-51 400 kBq (10uCi) for: Cd-109, I-125 For all other radioisotopes, contact the OHS Section for specific limits
Aqueous liquid radioactive waste (liquid that is readily miscible with water)	Discharge into the sewerage via a designated laboratory sink or outlet. It is recommended that: <ul style="list-style-type: none"> One sink only in each laboratory should be reserved for radioactive waste disposal, and the sink and pipes should be labelled with radiation warning signs Care should be exercised when discharging the waste to ensure there is no spillage or contamination, and the sink and surrounding area must be monitored after disposal to ensure there is no contamination 	For routine disposal, the total activity for each laboratory and radioisotope must be less than 400 kBq (10 microcuries) per day for: H-3, C-14, P-32, P-33, S-35, Cr-51, Cd-109, I-125 For all other radioisotopes or for non-routine disposal requirements, contact the OHS Section
Non-aqueous liquid radioactive waste (waste that is insoluble in water, such as solvents and volatile liquids)	Place into non-corrosive containers and removed to the University's Radiation Waste Store. Ensure that the waste is also packaged and labeled according to any dangerous goods or hazardous substances properties.	Not applicable (non-aqueous liquid waste is removed by licensed contractors)
Sharp objects such as needles or broken glass	Place into plastic sharps containers and then place the containers into solid radioactive waste bags	See solid radioactive waste limits
Scintillation vials containing liquid radioactive waste (aqueous and non-aqueous)	Place into 20 litre scintillation waste pails (supplied by the OHS Section on an exchange basis). When full, the pails are removed to the Radiation Waste Store.	Not applicable (scintillation waste is removed by licensed contractors)
Empty liquid radioisotope containers	Containers can be rinsed to ensure there is no residual radioactive material within and after the radiation labels are removed or obliterated, the containers can be disposed of into the general waste. Alternatively, dispose of containers as solid radioactive waste provided there is no significant volume of liquid waste (e.g. less than 0.1 mL) and there is no lead shielding in the container If there is lead shielding in the container, check to ensure there is no contamination and place in a separate bulk container and remove to the Radiation Waste Store	See solid radioactive waste limits No more than 5 kg in each bulk package of containers with lead shielding (to reduce manual handling risks)

Waste type	Disposal method	Limits
Sealed and non-dispersible radioactive sources	<p>Obtain specialist advice from the OHS Section on the appropriate method of disposal.</p> <p>Generally, sources with a short half life can be allowed to decay away and be disposed of to either general waste or in solid radioactive waste (depending on activity) after removing labels.</p> <p>Longer-lived isotopes normally require return to the original supplier or disposal by a licensed contractor.</p>	<p>For disposal as non-radioactive, the specific activity for each source must be less than 30 Bq/g and the total activity must be less than the exempt limit according to the Health (Radiation Safety) regulations.</p> <p>For disposal as solid radioactive waste, the solid radioactive waste limits apply</p>
Uranium and thorium compounds and radionuclides from the natural uranium or natural thorium decay series	Obtain specialist advice from the OHS Section on the appropriate method of disposal.	For radionuclides from the natural uranium or natural thorium decay series, including the parent uranium and thorium radionuclides themselves, there must be no more than 250 Bq per kg of waste.

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LOW LEVEL RADIOACTIVE WASTE

TYPE OF WASTE:	Solid []	Aqueous []	Solvent []
Radioisotope(s)			
Estimated activity			
Date of estimate			
Contents If liquid, provide details, e.g. type of solvent, dangerous goods class, etc		
Person responsible			
Laboratory and department			
Date			

March 2006

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LOW LEVEL RADIOACTIVE WASTE

TYPE OF WASTE:	Solid []	Aqueous []	Solvent []
Radioisotope(s)			
Estimated activity			
Date of estimate			
Contents If liquid, provide details, e.g. type of solvent, dangerous goods class, etc		
Person responsible			
Laboratory and department			
Date			

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