

Biosafety Manual

Meet your biosafety team

Hello, I'm Dr Bernadette Bradley, and I'm your Biosafety Advisor. I am here to help you to get all the approvals you will need to commence your work involving biohazards and to answer all your biosafety questions.

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Alternatively, you can contact any member of Curtin's Institutional Biosafety Committee (IBC) (see the IBC section below) who are all passionate advocates for biosafety best practice and will be happy to help you.

Biosafety principles

If your research or teaching involves using:

- genetically modified organisms (GMOs),
- quarantined materials,
- infectious microorganisms, or
- biological hazards,

you will need to work in accordance with all the legislative requirements, and at a standard that ensures the safety of staff, students, the wider community, and the environment.

Please remember that some biological materials should be assumed to harbour infectious agents even though they might not be the target of your research e.g. HIV and hepatitis viruses in blood and blood fractions, prions in nerve tissue, EB virus in tissue culture cells, bacteria in soil samples, phytoplasmas in plant cuttings and sap, arboviruses in insects etc.

When planning new work

Before conducting research or teaching activities at Curtin, you will need to:

- identify the hazards inherent in your work,
- document your safety protocols in a written risk assessment, and
- seek any approvals you need from Curtin or Government regulatory bodies.

To start this process I recommend that you complete a [Hazard Identification Tool \(HIT\)](#) during the planning phase of all new work at Curtin. You will receive HIT Feedback that contains the same information that is in this Biosafety Manual, but you will only receive the information pertinent to your work, whereas this Biosafety Manual is the full set of biosafety information.

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Hazard Identification Tool (HIT) for Hazardous Materials

<https://hit.curtin.edu.au/home>

During the planning stage of any research or teaching activities at Curtin, you will need to identify the hazards inherent in your work, document your safety protocols in a written risk assessment, and seek any approvals you need from Curtin or Government regulatory bodies.

The above link will take you to the Hazard Identification Tool (HIT), which will assist you in identifying the chemicals, radiation, biological and environmental hazards associated with your work.

When you have submitted the HIT, you will get feedback about any approvals you need to seek from Curtin or Government regulatory bodies before you can begin work and advice about the appropriate controls for your risk assessment.

HDR Students will need to fill out a HIT as part of their candidacy approval process. Other students should use the HIT during their planning and if directed to do so by their Supervisor. The HIT for Staff can be used by new Staff when planning, and by existing Staff when changing or reviewing their work activities.

If you need assistance with the HIT, please [email](mailto:researchsafety@curtin.edu.au) the Hazardous Materials Office. (researchsafety@curtin.edu.au)

Risk Assessment

During the planning stage of any research or teaching activities at Curtin, you will need to assess the risks of the hazards inherent in your work and document the controls you will put in place to manage the hazards in a written risk assessment.

Please log into your Staff or Student portal and find the CHARM icon to access the risk assessment module.

For assistance with completing your risk assessment [email HSEM](#) and one of their advisors will contact you.

Pre-Procurement Checklist for Biohazards

Before you procure a new biological material, please check if there are any approvals you need to put in place by using the Pre-Procurement Checklist below.

Pre-Procurement Checklist for Biohazards

Please use this checklist before your initial procurement of a new biohazardous material.

Procurement of a biohazardous material includes: purchasing from a commercial or private provider, being gifted, sourcing through a collaboration, or collecting from the environment. Uses of the biohazardous material include both research and teaching activities, as well as promotional uses.

This checklist tells you about the State and Federal legislation that regulates the procurement and use of the biohazard that you want to procure, and outlines the required controls that you will need to fulfil in order to source and work with those materials. Where there is a regulatory requirement, such as an approval, that you will need to seek from within Curtin or from a government agency before you can procure the biohazard, you should apply for those approvals before you tell the supplier that you want the item.

Please remember that some biological materials should be assumed to harbour infectious agents even though you might not be the target of your research e.g. HIV and hepatitis viruses in blood and blood fractions, prions in nerve tissue, EB virus in tissue culture cells, phytoplasmas in plant cuttings and sap, arboviruses in insects etc.

For assistance regarding this checklist please contact Dr Bernadette Bradley, Curtin's Biosafety Advisor, on 9266 1383 or 0401 103 655 or at bernadette.bradley@curtin.edu.au . Alternatively, you can contact any member of Curtin's Institutional Biosafety Committee (IBC) directly for advice.



Biohazardous material	Regulatory requirements in addition to the Occupational Safety and Health Act	What you need to do before procurement
Animals	<ul style="list-style-type: none">• WA Animal Welfare Act (2002)• Australian code of practice for the care and use of animals for scientific purposes (7th edition 2004)	Apply for approval from Curtin’s Animal Ethics Committee http://research.curtin.edu.au/research-integrity-ethics/animal-research-ethics/ .
Samples taken from humans or animals <i>(for example: blood, sputum, tissue, urine, faeces, etc)</i>	<ul style="list-style-type: none">• National Health and Medical Research Council Act (1992)• The National Statement on Ethical Conduct in Human Research (2007)• WA Animal Welfare Act (2002)• Australian code of practice for the care and use of animals for scientific purposes (7th edition 2004)	<ul style="list-style-type: none">• Check if you need to apply for approval from Curtin’s Human Research Ethics Committee or Animal Ethics Committee http://research.curtin.edu.au/research-integrity-ethics/human-research-ethics/ .• Handle the samples as at least Risk Group 2, within a Class II Biosafety Cabinet inside a PC2 facility, unless they are known to contain microorganisms from RG3/4. For information about how to handle the samples, refer to AS/NZS2243.3:2010 (the Australian/New Zealand Standard 2243.3:2010 can be accessed by searching the library databases http://databases.library.curtin.edu.au/ for ‘Standards Australia online premium’, and then searching the SAI Global database for ‘2243.3’) and http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/263/NationalCodeOfPractice_Control_WorkRelatedExposure_Hepatitis_HIVViruses_NOHSC2010-2003_PDF.pdf . If you are able to handle your samples in this way then you do not need to seek IBC approval to do this work. However, if you can’t comply with these two documents for any reason, or you are not sure, then please contact the Biosafety Advisor, who will help you to seek IBC assessment and approval before you can begin work.• Samples from humans can infect you with diseases that those people carried. Samples from animals can infect you with zoonotic diseases that those animals carried. Please see the linked document about zoonoses for more information



		<p>http://www.dpi.nsw.gov.au/biosecurity/animal/humans/zoonoses-transmission .</p> <ul style="list-style-type: none"> It is recommended that you get the appropriate immunisations listed in The Australian Immunisation Handbook 9th Edition 2008 http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home . There may be other vaccinations available that are relevant to the samples you are handling.
<p>An Australian native animal, or samples/parts from an Australian native animal <i>(for example: fish, vertebrates, insects, invertebrates, fur, skulls, feathers, carcasses, bones, scats)</i></p>	<ul style="list-style-type: none"> Wildlife Conservation Act (1950) Fish Resources Management Act (1994) 	<p>Consider the requirements for a fauna licence http://www.dpaw.wa.gov.au/plants-and-animals/licences-and-permits/134-fauna-forms or a fish/crustaceans licence http://www.fish.wa.gov.au/Pages/Home.aspx .</p>
<p>Australian native plants, or parts of an Australian native plant <i>(for example: algae, flowering plants, and non-flowering plants, seeds, flowers, leaves, branches, roots)</i></p>	<ul style="list-style-type: none"> Wildlife Conservation Act (1950) 	<p>Consider the requirements for a flora licence http://www.dpaw.wa.gov.au/plants-and-animals/licences-and-permits/135-flora-licences .</p>
<p>A poisonous/toxic plant</p>		<p>Seek assessment of your handling methods from Curtin’s Institutional Biosafety Committee.</p>
<p>A weedy plant listed on the Department of Agriculture and Food's Declared Plants List? <i>(search for “Declared Plants List” on the</i></p>		<p>Plants on the Declared Plants List must be handled following the guidelines on the List. You must not release a pest plant into the environment.</p>



<p>DAFWA website http://www.agric.wa.gov.au/</p>		
<p>Biting/stinging or venomous/toxic invertebrates <i>(for example: bees, ants, jellyfish, coral)</i></p>		<p>Seek assessment of your handling methods from Curtin’s Institutional Biosafety Committee.</p>
<p>Insects that are able to act as vectors for human, animal and plant disease <i>(for example: mosquitoes, ticks, thrips)</i></p>		<p>Please consult Section 3 of the AS/NZS2243.3:2010 (the Australian/New Zealand Standard 2243.3:2010 can be accessed by searching the library databases http://databases.library.curtin.edu.au/ for ‘Standards Australia online premium’, and then searching the SAI Global database for ‘2243.3’) to identify the Risk Group that those insects should be handled at, and handle them using the appropriate Physical Containment level (Section 5 of the AS/NZS2243.3:2010). If you are able to handle the insects at the same PC level as their RG then you do not need to seek IBC approval to do this work. However, if you can’t comply with these two sections of the Standard for any reason, or you are unsure, then you will need to contact the Biosafety Advisor, who will help you to seek IBC assessment of your handling methods, and approval before you can begin work.</p>
<p>Microorganisms in Risk Groups 2, 3 or 4 <i>(to find the Risk Group of your microorganism, refer to Section 3 of the Australian/New Zealand Standard 2243.3:2010. It can be accessed by searching the library databases http://databases.library.c</i></p>		<p>All microorganisms in Risk Groups (RG) 2, 3 or 4 need to be handled at the appropriate corresponding Physical Containment (PC) level (e.g. PC2 for RG2). For information about how to handle the samples, refer to Sections 3-5 of the AS/NZS2243.3:2010. If you can handle your microorganism at the same PC level as their RG then you don’t need IBC approval. This includes handling the microorganism entirely within a Class II Biosafety Cabinet if it can be infective via the respiratory route. However, if you need to use non-Standard methods, then please contact the Biosafety Advisor, who will help you to seek IBC assessment of your methods, and approval, before you can begin work. A second control may be vaccination.</p>



<p>urtin.edu.au/ for 'Standards Australia online premium', and then searching the SAI Global database for '2243.3')</p>		
<p>Security Sensitive Biological Agents (SSBA)</p> <p><i>Abrin (reportable quantity 5 mg), Yersinia pestis (Plague), Bacillus anthracis (Anthraxvirulent strains), African swine fever virus,</i></p>	<p>National Health Security Act (2007) – Part 3</p> <p><i>Clostridium botulinum (Botulism, toxin-producing strains), only), Botulinum toxin (non-therapeutic forms, reportable quantity 0.5 mg), Capripoxvirus (Sheep pox virus and Goat pox virus),</i></p>	<p>Contact the Biosafety Advisor bernadette.bradley@curtin.edu.au (0401103655 or 92661383) and the Chair of Curtin's Institutional Biosafety Committee r.steuart@curtin.edu.au immediately.</p> <p><i>Ebolavirus, Classical swine fever virus, Foot-and-mouth disease virus, Francisella tularensis (Tularaemia), Highly pathogenic influenza virus infecting humans, Marburgvirus, Lumpy skin disease virus, Ricin (reportable quantity 5 mg), Peste-des-petits-ruminants virus, Rinderpest virus, Salmonella Typhi (Typhoid), SARS coronavirus, Variola virus (Smallpox), Vibrio cholerae (Cholera, serotypes O1 and O139, Yellow fever virus (non-vaccine strains)</i></p>
<p>Any environmental or biological specimen likely to contain an SSBA (see above) that you are planning to culture microorganisms from (for example: from soil, wastewater, manure, animal carcasses, human excreta)</p>	<p>National Health Security Act (2007) – Part 3</p>	<p>Contact the Biosafety Advisor bernadette.bradley@curtin.edu.au (0401103655 or 92661383) and the Chair of Curtin's Institutional Biosafety Committee r.steuart@curtin.edu.au .</p>
<p>A genetically modified organism GMO (GMOs include many commercially available and gifted: cell cultures, mouse models, clones,</p>	<p>Gene Technology Act (2000)</p>	<p>Apply for approval from Curtin's Institutional Biosafety Committee by following the steps on this website http://research.curtin.edu.au/research-integrity-ethics/biosafety/genetically-modified-organisms/ .</p>



<i>microorganisms containing constructed plasmids, and viral vectors.)</i>		
Biological material or soil/sand/rocks imported from overseas	<ul style="list-style-type: none">• Quarantine Act 1908 (Commonwealth)• Biosecurity and Agriculture Management Act 2007 (State)	The Biosafety Advisor bernadette.bradley@curtin.edu.au (0401103655 or 92661383) will help you to figure out if you need quarantine Import Permits from either or both Federal and State Departments of Agriculture.
Biological material or soil/sand/rocks transported from the Eastern States into Western Australia	Biosecurity and Agriculture Management Act 2007 and Regulations (State)	The Biosafety Advisor bernadette.bradley@curtin.edu.au (0401103655 or 92661383) can help you to figure out if you need a quarantine Import Approval from the State Department of Agriculture and Food.

Australian/New Zealand Standard 2243.3:2010 Safety in laboratories Part 3: Microbiological safety and containment.

When you are looking for information about biosafety and microbiological lab safety, the “Australian/New Zealand Standard 2243.3:2010 Safety in laboratories Part 3: Microbiological safety and containment”, is your first source of information.

It is the Standard that all of Australia is using to describe the management of biohazards of all kinds, all of Curtin’s biosafety systems have been developed from this Standard, and you should always refer to it for guidance.

Curtin staff and students have access to the Standard through the Curtin Library online. Look in the [Library Databases](#) (<http://databases.library.curtin.edu.au/>), under ‘S’ for ‘Standards Australia on-line premium’. This will lead you to SAI Global, which you can search for ‘2243.3:2010’ to get the Standard.

Curtin has several licences to access SAI Global, but remember to log out when you have finished working, so that other users can access the database. If you can’t get into the Standard, it may be because other users are using all Curtin’s access licences. Wait a few minutes and try again. Your downloaded copy of the Standard will self-erase after a couple of days, and you will need to go back to SAI Global to get another copy each time you need it.

Biosafety training

Aside from reading this Manual and reading the Australian Standard, if you want or need more biosafety training, please see below.

Working with Genetically Modified Organisms (GMOs) training course.

If you work with Genetically Modified Organisms (GMOs), or within a research facility Certified by the Office of the Gene Technology Regulator (OGTR), then you need to complete the compulsory Gene Technology Training. This training is given every second month by the IBC Chair, [Dr Rob Steuart](#). The date and time will be advertised by Facility Managers and School Managers in the biosciences areas, so keep your eyes open for that email announcement. Alternatively, get a group together and request a special session, which will be given by the IBC Chair or the Biosafety Advisor [Dr Bernadette Bradley](#).

Purchase the Department of Agriculture online quarantine training course.

[Approved Arrangement Accredited Person](#) (<http://www.aitgb.com.au/>) training is available online from the Department of Agriculture. The training is mandatory for the Responsible Persons who manage Approved Arrangement quarantine facilities, and for holders of Import Permits. The course costs \$88 and requires credit card payment.

Non-Curtin sources of biosafety training.

There are various free training courses available online from non-Curtin sources, including The American Biological Safety Association the has four videos about [Animal Biosafety](#) (<https://absa.org/abs/>) and the Victorian Infectious Diseases Reference Laboratory has a video about working safely in a [Class II Biological Safety Cabinet](#) (<http://www.vidrl.org.au/resources/working-safely-in-a-class-ii-biological-safety-cabinet/>).

Genetically modified organisms

Prior to beginning your research or teaching work using Genetically Modified Organisms (GMOs), you must tell the Institutional Biosafety Committee (IBC) what you plan to do and get the appropriate written approvals.

Log into the InfoEd program (<https://infoed.curtin.edu.au>) to apply to the IBC.

There are four classes of GM Dealing and, if you are interested, you can learn about them here:

Exempt Dealings (EDs)

Exempt Dealings (EDs) pose the lowest level of risk. Curtin is therefore exempt from having to notify the OGTR that EDs are being done (like for an NLRD), or from seeking a Licence from the OGTR (like for a DNIR or DIR). EDs must be contained within a research or teaching facility, and must not involve the release of the organism into the environment. To check if your work is an ED, read [What Dealings with GMO's are Classified as Exempt Dealings](#). Some immortalised cell cultures have been genetically modified, please always check if an Exempt Dealing is required. You can do an ED in any lab. Getting IBC approval to perform an ED should only take a few days.

Notifiable Low Risk Dealings (NLRDs)

Notifiable Low Risk Dealings (NLRDs) pose a low level of risk. Curtin must notify the OGTR about each NLRD that is being done. NLRDs must be contained within an OGTR-Certified research facility, and must not involve the release of the organism into the environment. To check if your work is an NLRD, read [Types of Dealings with GMOs classified as Notifiable Low Risk Dealings \(NLRDs\)](#). You can only do NLRDs in OGTR – Certified Facilities (orange door sticker). Getting IBC Approval to perform an NLRD should take about three weeks, but may take up to two months.

Dealings Not involving an Intentional Release (DNIRs)

Dealings Not involving an Intentional Release (DNIRs) pose a higher level of risk. This class includes all dealings that are not EDs or NLRDs, and which do not involve an intentional release of the organism into the environment. DNIRs must be Licenced to Curtin University by the OGTR. To check if your work is a DNIR, read [What are Dealings NOT involving an Intentional Release \(DNIR\) of a GMO into the environment?](#)

If you want to perform a DNIR then please contact your [Biosafety Advisor](#), who will help you through the application process. You must first apply to the IBC for permission, and gain the IBC's Approval. The IBC will then apply to the OGTR for permission, and gain the OGTR's Licence to do the dealing. You cannot commence your work until you receive a Licence, and this can take up to six months, so apply early to avoid delays. For more information see dealings not involving release on the OGTR website.

Dealings involving an Intentional Release (DIRs)

Dealings involving an Intentional Release (DIRs) pose a higher level of risk. This class includes all dealings involving the release of the organism into the environment, usually field trials of plants. DIRs must be Licenced to Curtin University by the OGTR. To check if your work is a DIR, read [What are Dealings involving an Intentional Release \(DIR\) of a GMO into the environment?](#)

If you want to perform a DIR then please contact your [Biosafety Advisor](#), who will help you through the application process. You must first apply to the IBC for permission, and gain the IBC's Approval. The IBC will then apply to the OGTR for permission, and gain the OGTR's Licence to do the dealing. You cannot commence your work until you receive a Licence, and this can take between 9 and 14 months, so apply early to avoid delays.

Legislation governing the use of GMOs in Australia - the Gene Technology Act 2000.

The [Gene Technology Act 2000 and Regulations 2001](#)

(<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/legislation-2>) describe a national scheme for the regulation of GMOs in Australia. The legislation aims to make GM techniques safe for researchers, the public and the environment. However, the safety of recombinant DNA work ultimately depends on the individuals conducting it.

The object of this Act is to protect the health and safety of people and to protect the environment, by identifying risks posed by or as a result of gene technology, and by managing those risks through regulating certain dealings with GMOs.

The purpose of the Act is to ensure that all work with GMOs within Australia is carried out in such a way that threats to human health and the environment are minimised.

The [Office of the Gene Technology Regulator \(OGTR\)](#)

(<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/home-1>) is the administrative body under the Act. The OGTR has awarded Curtin University status as an [Accredited Organisation](#)

(<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/accredorg-1#wa>), enabling us to perform gene technology [Dealings](#) (<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/dir126lic-toc~dir126lic-gtreg>), and maintain several [OGTR-Certified](#)

(<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/certifications-1>) research facilities.

The OGTR empowers the Curtin University Institutional Biosafety Committee (IBC) to assess and monitor the GM Dealings done at Curtin, and therefore you will need approval from the IBC before you can do any GM Dealing at Curtin.

Working with GMOs training course.

If you work with Genetically Modified Organisms (GMOs), or within a research facility Certified by the Office of the Gene Technology Regulator (OGTR), then you need to complete the compulsory Gene Technology Training. This is held every second month through the year and is presented by the IBC Chair. The date and time will be advertised by Facility Managers and School Managers in the biosciences areas, so keep your eyes open for the email announcement. Alternatively, get a group together and request a special session, which will be given by the Biosafety Advisor.

Institutional Biosafety Committee

Curtin's Institutional Biosafety Committee (IBC) oversees all the research and teaching at Curtin involving the use of genetically modified organisms (GMOs), quarantined biological materials, infectious microorganisms, and other biohazardous materials.

The Members of the IBC are appointed to reflect the requirements, in the Gene Technology Act and Regulations, for an organisation to be advised by people who have expertise related to working safely with a hazard.

- [Associate Professor David Groth](#), is an Associate Professor in the School of Biomedical Sciences.
- [Dr Josh Ramsay](#) is a Lecturer in the School of Biomedical Sciences.

- [Dr Matthew Denton-Giles](#) is a Research Fellow in the Centre for Crop Disease Management.
- [Dr Rob Steuart](#), Research Facility Manager in the School of Biomedical Sciences, is the Chair of the IBC.
- [Dr Beng Chua](#) is the Manager of the Animal Facility.
- [Dr Peta Tilbrook](#) is the Manager of Technical Services for the Department of Environment and Agriculture.
- [Mr Frank Collins](#) is the Manager of Mechanical Engineering in Properties – Facility Management.
- Mr Gavin Waugh, the Director of [Safety in Workplaces Australia \(SIWA\)](#), is the independent member.
- [Prof Mark Gibberd](#) is the Director of the Centre for Crop Disease Management.
- [Prof John Mamo](#) is the Director of the Curtin Health Innovation Research Institute.
- [Dr Bernadette Bradley](#), Biosafety Advisor in the Office of Research and Development, is the Executive Officer and Secretary of the IBC.

Curtin University's Institutional Biosafety Committee (IBC) is a committee required by, and described in, federal legislation regulating the use of genetically modified organisms (GMOs) in Australia.

The IBC's scope is to advise on the development and implementation of safe working conditions and procedures, in situations which involve staff and students handling potentially hazardous micro-organisms, cells and products, and the use of genetically modified organisms.

The IBC reports to the following University Committees: the Hazardous Materials Governance Committee (HMGC), the University Health and Safety Committee (UHSC), the Faculty of Science and Engineering Health and Safety Committee, and the Health Sciences Health and Safety Committee.

Biosecurity

Biosecurity (quarantine) is a critical part of the government's efforts to prevent, respond to and recover from pests and diseases that threaten the economy and environment. If you want to import biological materials or soil/sand/rock from overseas or interstate, they will be subject to quarantine regulation.

How to import biological materials or soil/sand/rock into Curtin.

There are two levels of quarantine that apply to Western Australia:

- [State quarantine](https://www.agric.wa.gov.au/biosecurity-quarantine/quarantine) (<https://www.agric.wa.gov.au/biosecurity-quarantine/quarantine>) between WA and the Eastern States of Australia
- [Federal quarantine](http://www.agriculture.gov.au/biosecurity) (<http://www.agriculture.gov.au/biosecurity>) between Australia and overseas

You might need import permits from both Federal and State quarantine, or you might just need Federal quarantine import permit, or you might not need any permits at all.

Follow the steps below to figure out which kinds of permit(s) you need to apply for, and please contact the [Biosafety Advisor](#) for assistance.

To import from overseas:

Step 1. Search the Department of Agriculture [BICON](#)

(<https://bicon.agriculture.gov.au/BiconWeb4.0>) database for Federal quarantine import requirements.

Step 2. Read the import conditions for your commodity to figure out if you need to apply for an Import Permit. If you don't require an Import Permit then just follow the import conditions.

Step 3. If you do require an Import Permit then you must register (top right) to join the existing Curtin multiple user account. The Organisation Name is "Curtin University" and the Account Administrator's Email is "bernadette.bradley@curtin.edu.au".

Step 4. Once you have been confirmed as a user, you can apply for an Import Permit – you will need a credit card. Sometimes you may need to bring the materials into a Quarantine Approved Premises (QAP) – ask your lab manager and/or the [Biosafety Advisor](#) for assistance to either get access to a QAP or to get the approval for your own lab.

Western Australian quarantine:

Step 5. Search the [WA Organisms List](#) (<https://www.agric.wa.gov.au/organisms>) to find the legal status of the organism you want to import. If it is Listed then you can see any control requirements required. If it is unlisted or requires a permit then you will need to apply for an Import Permit.

Step 6. Check the [Import Requirements](#) (<https://www.agric.wa.gov.au/iaquarantine/>) associated with the organism. Fulfil all the listed requirements.

Note: If you want more information, you can try phoning Quarantine WA on (08) 9334 1800. Remember Curtin's Biosafety Advisor may also be able to assist you.

Legislation governing the use of quarantined materials in Australia - the Biosecurity Act 2015

There are several Federal and State Acts of law that cover quarantine, and it is illegal to import any biological material without adhering to all the Guidelines and Regulations associated with those Acts.

The key legislation is the:

- [Biosecurity Act 2015](#) (<https://www.legislation.gov.au/Search/biosecurity%20act>) that recently replaced the [Quarantine Act 1908](#)
- [Biosecurity and Agriculture Management Act 2007](#) (State) (https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_2735_homepage.html) and [Regulations](#) (2013) (https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_13043_homepage.html)

These Acts are administered by the:

- [Department of Agriculture](#) (Commonwealth) (<http://www.agriculture.gov.au/biosecurity>)
- [Department of Agriculture and Food](#) (State) (<https://www.agric.wa.gov.au/biosecurity-quarantine/quarantine>)

Biosecurity is a critical part of the government's efforts to prevent, respond to and recover from pests and diseases that threaten the economy and environment. The department works to ensure continued market access for our products and to maintain our high standards for emergency response.

Australia's biosecurity system protects our unique environment and agricultural sector and supports our reputation as a safe and reliable trading nation. This has significant economic, environmental and community benefits for all Australians.

Purchase the Approved Arrangements Accredited Person online training course from the Department of Agriculture.

[Approved Arrangements Accredited Person](http://www.aitgb.com.au/) (<http://www.aitgb.com.au/>) training is available online from the Department of Agriculture. The training is mandatory for the Responsible Persons who manage Approved Arrangements quarantine facilities, and for holders of Import Permits. The course costs approximately \$88 and requires credit card payment.

Pathogenic microorganisms

Some of our people study pathogenic or infectious microorganisms, trying to find cures for diseases of people, animals and plants.

All microorganisms in Risk Groups (RG) 2, 3 or 4 need to be handled at the appropriate corresponding Physical Containment (PC) level (eg. PC2 for RG2).

For information about how to handle the samples, refer to Sections 3-5 of the Australian/New Zealand Standard 2243.3:2010. The A/NZS2243.3:2010 can be accessed by searching the [library databases](#) for 'Standards Australia online premium', and then searching the SAI Global database for '2243.3'.

If you can handle your microorganism at the same PC level as their RG then you don't need Institutional Biosafety Committee (IBC) approval. This includes handling the microorganism entirely within a Class II Biosafety Cabinet if it can be infective via the respiratory route. However, if you need to use non-Standard methods, then please contact the [Biosafety Advisor](#), who will help you to seek IBC assessment of your methods, and approval, before you can begin work.

Some animal pathogens are zoonotic and can infect you. Please see the linked document about zoonoses for more information <http://www.dpi.nsw.gov.au/biosecurity/animal/humans/zoonoses-transmission> .

It is recommended that you get the appropriate immunisations listed in [The Australian Immunisation Handbook 10th Edition 2015](#) (<http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home>). There may be other vaccinations available that are relevant to the samples you are handling.

If you are planning to do this work at a non-Curtin site, you still must handle your microorganisms safely, to the standard described above.

If you need to transport your microorganisms, you must transport them following the Guidelines for Transporting Biohazards.

For your Risk Assessment, the hazard is infection with disease. The first control is handling the sample under the appropriate Physical Containment conditions or using methods approved by the IBC. A second control may be vaccination.

Samples From Humans or Animals

If you are planning to conduct research or teaching activities involving samples taken from humans or animals (*for example: blood, sputum, tissue, urine, faeces, meat, bones, feathers etc*) then you will need to take the points below into consideration.

Samples taken from humans or animals may contain infectious microorganisms, and you will need to put controls in place to protect yourself and others.

1. You or your Supervisor may need to apply for approval for you from the [Human Research Ethics Committee](#) or [Animal Ethics Committee](#) before you can source samples from humans or animals, please check.
2. All samples from humans or animals need to be handled as Risk Group 2, within PC2 facility, unless they are known to contain microorganisms from RG3/4. For information about how to handle your samples, refer to AS/NZS2243.3:2010. The Australian/New Zealand Standard 2243.3:2010 can be accessed by searching the library databases <http://databases.library.curtin.edu.au/> for 'Standards Australia online premium', and then searching the SAI Global database for '2243.3' and http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/263/NationalCodeOfPractice_Control_WorkRelatedExposure_Hepatitis_HIVViruses_NOHSC2010-2003_PDF.pdf . If possible, handle your samples inside a Class II Biosafety Cabinet. If you are able to handle your samples at PC2 then you do not need to seek IBC approval to do this work. However, if you can't comply with these two documents for any reason, or you are not sure, then please contact the Biosafety Advisor, who will help you to seek IBC assessment and approval before you can begin work.
3. Samples from humans can infect you with diseases that those people carried. Samples from animals can infect you with zoonotic diseases that those animals carried. Please see the linked document about zoonoses for more information <http://www.dpi.nsw.gov.au/biosecurity/animal/humans/zoonoses-transmission> .
4. It is recommended that you get the appropriate immunisations listed in The Australian Immunisation Handbook 10th Edition 2015 <http://www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part3~handbook10-3-3#3-3-7> . There may be other vaccinations available that are relevant to the samples you are handling.
5. Some cancer cell lines are able to colonise a person if the cells are aspirated into the lungs or get in the eyes. Please treat those cancer cell lines as infectious.
6. If you are planning to do this work at a non-Curtin site, you still must handle your samples safely, to the standard described above.
7. If you need to transport your samples, you must transport them following the [Guidelines for transporting biohazards](#) .

For your Risk Assessment, one hazard is harm to the human or animal test subject. The control is seeking and gaining approval from the HREC or AEC. For your Risk Assessment, another hazard is infection with a pathogen originating from your sample. The first control is handling the sample under PC2 conditions or using methods approved by the IBC. A second control is vaccination.

Security Sensitive Biological Agents (SSBA) and the Defence and Strategic Goods List (DSGL)

Security Sensitive Biological Agents (SSBA) are weaponisable pathogens or toxins that could be used to make a bioweapon. The Security Sensitive Biological Agents (SSBA) Regulatory Scheme limits the opportunities for acts of bioterrorism or biocrime to occur using harmful biological agents. Curtin is not registered to work with SSBAs and it is, therefore illegal for any of our people to store or work with SSBAs.

The Defence and Strategic Goods List (DSGL) includes a list of microorganisms that it is illegal to transport internationally (under the Customs Act), and illegal to communicate new information about (under the Defence Trade Controls Act), without the correct permits from Government Departments.

If you are planning to conduct research involving any of the following toxins, or pathogenic microorganisms, or nucleic acid sequences encoding the toxins or associated with the pathogenicity of the organisms, then you must contact the Biosafety Advisor bernadette.bradley@curtin.edu.au and the Chair of the IBC R.Steuart@curtin.edu.au immediately, to begin the process of seeking the required approvals.

Toxins:

Abrin, Aflatoxins, Botulinum toxins, Cholera toxin, *Clostridium perfringens* alpha/beta 1/beta 2/epsilon/iota toxins, Conotoxin, Diacetoxyscirpenol toxin, HT-2 toxin, Microcystin (Cyanoginosin), Modeccin, Ricin, Saxitoxin, Shiga toxin, *Staphylococcus aureus* enterotoxins or hemolysin alpha toxin or toxic shock syndrome toxin (formerly known as *Staphylococcus* enterotoxin F), T-2 toxin, Tetrodotoxin, Verotoxin and shiga-like ribosome inactivating proteins, Viscum Album Lectin 1 (Viscumin), Volkensin

Human pathogenic viruses:

Andes virus, Chapare virus, Chikungunya virus, Choclo virus, Congo-Crimean haemorrhagic fever virus, Dengue fever virus, Dobrava-Belgrade virus, Eastern equine encephalitis virus, Ebolavirus (all members of the Ebolavirus genus), Guanarito virus, Hantaan virus, Hendra virus (Equine morbillivirus), highly pathogenic influenza virus infecting humans, reconstructed 1918 influenza virus, Japanese encephalitis virus, Junin virus, Kyasanur Forest disease virus, Laguna Negra virus, Lassa fever virus, Louping ill virus, Lujo virus, Lymphocytic choriomeningitis virus, Machupo virus, Marburgvirus (all members of the Marburgvirus genus), Monkeypox virus, Murray Valley encephalitis virus, Nipah virus, Omsk hemorrhagic fever virus, Oropouche virus, Powassan virus, Rift Valley fever virus, Rocio virus, Sabia virus, Seoul virus, Severe acute respiratory syndrome-related coronavirus (SARS-related coronavirus), Sin Nombre virus, St Louis encephalitis virus, Suid herpesvirus 1 (Pseudorabies virus; Aujeszky's disease), Tick-borne encephalitis virus (Far Eastern subtype), Variola virus, Venezuelan equine encephalitis virus, Western equine encephalitis virus, Yellow fever virus.

Human pathogenic bacteria:

Bacillus anthracis, *Brucella abortus*, *Brucella melitensis*, *Brucella suis*, *Burkholderia mallei* (*Pseudomonas mallei*), *Burkholderia pseudomallei* (*Pseudomonas pseudomallei*), *Chlamydomphila psittaci* (formerly known as *Chlamydia psittaci*), *Clostridium botulinum*, *Clostridium argentinense* (formerly known as *Clostridium botulinum* Type G) botulinum

neurotoxin producing strains, *Clostridium baratii* botulinum neurotoxin producing strains, *Clostridium butyricum* botulinum neurotoxin producing strains, *Clostridium perfringens* epsilon toxin producing types 2, *Coxiella burnetii*, Shiga toxin producing *Escherichia coli* (STEC, enterohaemorrhagic *E. coli* EHEC or verocytotoxin producing *E. coli* VTEC) of serogroups O26/O45/O103/O104/O111/O121/O145/O157 and other shiga toxin producing serogroups, *Francisella tularensis*, *Rickettsia prowazekii*, *Salmonella typhi*, *Shigella dysenteriae*, *Vibrio cholera*, *Yersinia pestis*.

Human pathogenic fungi:

Coccidioides immitis, *Coccidioides posadasii*.

Animal pathogenic viruses:

African horse sickness virus, African swine fever virus, Avian influenza virus which are uncharacterised or having high pathogenicity, Bluetongue virus, Foot-and-mouth disease virus, Goatpox virus, Herpes virus (Aujeszky's disease), Lumpy skin disease virus, Newcastle disease virus, Peste-des-petits ruminants virus, Porcine Teschovirus, Rabies virus and all other members of the Lyssavirus genus, Rinderpest virus, Sheeppox virus, Swine fever virus (Hog cholera virus), Teschen disease virus, Vesicular stomatitis virus

Animal pathogenic mycoplasmas:

Mycoplasma mycoides subspecies *mycoides* SC (small colony), *Mycoplasma capricolum* subspecies *capripneumoniae* (strain F38);

Plant pathogenic viruses:

Potato Andean latent tymovirus, Potato spindle tuber viroid,

Plant pathogenic bacteria:

Clavibacter michiganensis subsp. *Sepedonicus* (*Corynebacterium michiganensis* subsp. *Sepedonicum* or *Corynebacterium Sepedonicum*), *Ralstonia solanacearum* Races 2 and 3 (*Pseudomonas solanacearum* Races 2 and 3 or *Burkholderia solanacearum* Races 2 and 3), *Xanthomonas albilineans*, *Xanthomonas campestris* pv. *citri* (or pv. *aurantifolia* or pv. *Citrumelo*), *Xanthomonas oryzae* pv. *Oryzae* (*Pseudomonas campestris* pv. *Oryzae*),

Plant pathogenic fungi:

Cochliobolus miyabeanus (*Helminthosporium oryzae*), *Colletotrichum coffeanum* var. *virulans* (*Colletotrichum kahawae*), *Magnaporthe grisea* (*pyricularia grisea*/*pyricularia oryzae*), *Microcyclus ulei* (syn. *Dothidella ulei*), *Puccinia graminis* ssp. *graminis* var. *graminis* / *Puccinia graminis* ssp. *graminis* var. *stakmanii* (*Puccinia graminis* [syn. *Puccinia graminis* f. sp. *tritici*]), *Puccinia striiformis* (syn. *Puccinia glumarum*)

Legislation governing the use of SSBA in Australia - the National Health Security Act - Part 3.

Part 3 of the [National Health Security Act 2007 and Regulations 2008](http://www.health.gov.au/SSBA) (<http://www.health.gov.au/SSBA>) describes a national scheme for the regulation of SSBA in Australia and builds on Australia's obligations under the Biological and Toxin Weapons Convention (1975) and UN Security Council Resolution 1540 (2004).

The [Department of Health and Ageing](http://www.health.gov.au/SSBA) (DoHA) (<http://www.health.gov.au/SSBA>) is the administrative body under the Act. Any institution that intends to store or perform research with, SSBA must be registered with DoHA before the agent is imported into their site.

From www.health.gov.au/SSBA:

“The deliberate release of harmful biological agents such as viruses, bacteria, fungi and toxins has the potential to cause significant damage to human health, the environment and the Australian economy.

In 2006, the Council of Australian Governments’ (COAG) Report on the Regulation and Control of Biological Agents identified that the regulations in place at the time focused on safety rather than security; and that there was a need to regulate the secure storage, possession, use and transport of security sensitive biological agents to minimise the risk of use for terrorism or criminal purposes.

The aim of the SSBA Regulatory Scheme is to limit the opportunities for acts of bioterrorism or biocrime to occur using harmful biological agents and to provide a legislative framework for managing the security of SSBAs. The scheme was developed using risk management principles to achieve a balance between counter-terrorism concerns and the interests of the regulated community and aims to maintain full access to SSBAs for those with a legitimate need. The SSBA Regulatory Scheme also builds on Australia’s obligations under the Biological and Toxins Weapons Convention and UN Security Council Resolution 1540.” (www.health.gov.au/SSBA – September 2015)

Customs Act and the Defence Trade Controls Act

Australian legislation controls the export of controlled goods and technologies under two Acts, the Customs Act 1901 (Cth) controls tangible goods, and the Defence Trade Controls Act 2012 (DTCA) controls intangible goods.

Tangible exports are controlled goods and technology that leave Australia in the tangible (physical) form. This may include the microorganisms themselves, plus blueprints, plans, technical data etc., and included controlled technology stored on a physical medium such as a USB, computer hard drive, CD etc.

Intangible exports are controlled technology that is sent from Australia electronically rather than in a physical form. This may include supply via email, fax, password access to electronic files etc. Intangible supply also includes brokering. Brokering is when one person arranges the supply of goods listed in the DSGL or supply of DSGL technology to a place outside of Australia. Intangible supply also refers to publishing. This is where a person publishes or disseminates DSGL technology to the public by electronic or other means.

Training is available through the [Defence Export Controls Awareness Training Program](#).

Australian Native Animals or Plants

If you are planning to conduct research or teaching activities involving an Australian native animal or plant, or samples/parts from an Australian native animal or plant (*for example: fish, vertebrates, insects, invertebrates, fur, skulls, feathers, carcasses, bones, scats, algae, flowering plants, and non-flowering plants, seeds, flowers, leaves, branches, roots*) then you will need to take the points below into consideration.

Native animals are protected under the Wildlife Conservation Act (1950). Aquatic species may also be protected under the Fish Resources Management Act (1994).

- Please consider the requirements for a fauna licence <http://www.dpaw.wa.gov.au/plants-and-animals/licences-and-permits/134-fauna-forms> .
- Please also consider the requirements for a licence for fish and crustaceans <http://www.fish.wa.gov.au/Pages/Home.aspx> .

Native plants are protected under the Wildlife Conservation Act (1950).

- Please consider the requirements for a flora licence <http://www.dpaw.wa.gov.au/plants-and-animals/licences-and-permits/135-flora-licences> .

For your Risk Assessment, the hazard is harm to native animal or plant populations. The control is seeking and gaining approval from the appropriate government department.

Plants that are Poisonous, Toxic, or Weedy

Poisonous/toxic plants must be handled to protect workers from the poison/toxin. Please contact the Biosafety Advisor biosafety@curtin.edu.au , who will help you to seek IBC assessment of your handling methods, and approval, before you can begin work.

For your Risk Assessment, the hazard is being poisoned by the plant. The IBC will advise you about the controls you will need to use.

If you are planning to conduct research or teaching activities involving a weedy plant listed on the Department of Agriculture and Food's Declared Plants List (*search for "Declared Plants List" on the DAFWA website <http://www.agric.wa.gov.au/>*) then you will need to handle it following the guidelines on the List. You must not release a pest plant into the environment.

For your Risk Assessment, the hazard is harming the natural or agricultural ecosystems by invasion of a weedy plant. The control is to fully contain the plant by following the guidelines on the Declared Plants List at all times.

Invertebrates that are Venomous, Toxic, or Able to Act as Vectors for Disease

If you are planning to conduct research or teaching activities involving biting/stinging or venomous/toxic invertebrates that could harm the handlers (*for example: bees, ants, jellyfish, coral*) then you will need to handle them using methods to protect workers from the bite/sting or venom/toxin.

Please contact the Biosafety Advisor biosafety@curtin.edu.au , who will help you to seek IBC assessment of your handling methods, and approval, before you can begin work.

For your Risk Assessment, the hazard is poisoning with invertebrate venom. The IBC will advise you about the control measures that you will need to take.

If you are planning to conduct research or teaching activities involving insects that are able to act as vectors for human, animal and plant disease (*for example: mosquitoes, ticks, thrips*) you will need to do the following. Consult Section 3 of the AS/NZS2243.3:2010 (the Australian/New Zealand Standard 2243.3:2010 can be accessed by searching the library databases <http://databases.library.curtin.edu.au/> for 'Standards Australia online premium', and then searching the SAI Global database for '2243.3') to identify the Risk Group that those insects should be handled at, and handle them using the appropriate Physical Containment level (Section 5 of the AS/NZS2243.3:2010). If you are able to handle the insects at the same PC level as their RG then you do not need to seek IBC approval to do this work. However, if you can't comply with these two sections of the Standard for any reason, or you are unsure, then you will need to contact the Biosafety Advisor

biosafety@curtin.edu.au , who will help you to seek IBC assessment of your handling methods, and approval before you can begin work.

For your Risk Assessment, the hazard is infection with disease spread by the vector. The first control is handling the sample under at least PC2 conditions or using methods approved by the IBC. A second control may be vaccination.

Transporting biological materials

Transporting biological materials is a regulated activity, and you must do it following the guidelines and regulations below, for transporting by walking, by vehicle (car, truck, bus, train), and by post or plane.

Guidelines for transporting biological materials by walking and carrying your samples.

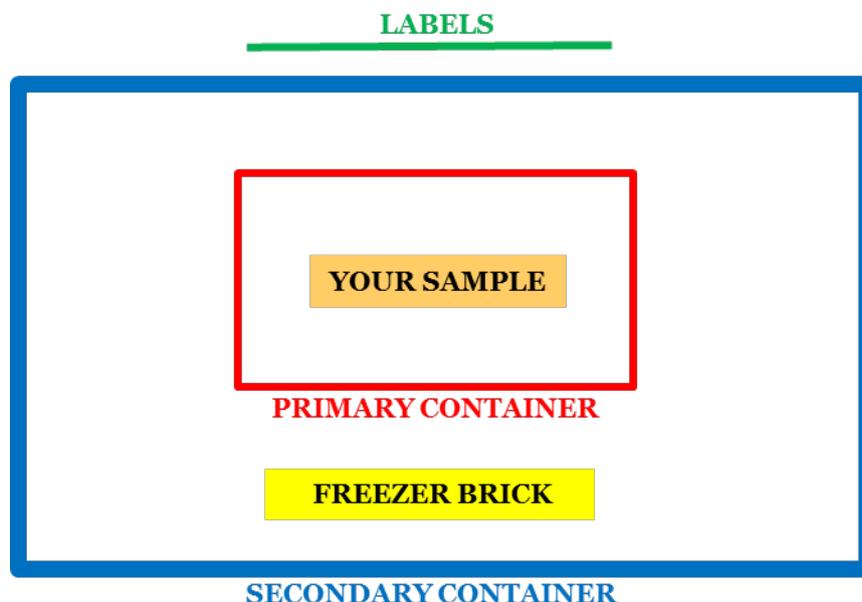
You might need to transport biohazards (experiments or waste) by walking and carrying your samples between:

- two labs in the same building separated by non-lab corridors
- two labs in different buildings
- from a lab to a storage area.

You will need to package and label your samples to ensure that, no matter what happens to the package during transport, they will not:

- become contaminated by the environment
- escape containment to contaminate people or the environment.

You must double contain your microorganisms as described and shown below.



PRIMARY CONTAINER

- Must be sealed.
e.g. an eppendorf tube, a taped petri dish, a taped bag of waste.

SECONDARY CONTAINER

- Must be sealed.
- Must be rigid, solid, durable enough to survive being dropped.
e.g. a lidded plastic lunchbox, a taped polystyrene esky.

LABELS

- A biohazard symbol.
- A brief description of the contents (can be on a post-it note).
- The name and contact phone number of a researcher not carrying the package, a Facility Manager, or the Biosafety Advisor.

REFRIGERANTS

- Use freezer bricks rather than wet ice.
- If you want to refrigerate your package using dry ice (carbon dioxide) or liquid nitrogen then those are Dangerous Goods and have their own safe handling practices and regulatory requirements that are not covered here. Avoid using these refrigerants, but if you need to then you need to find out how to do so safely.

HIGHER CONTAINMENT CONSIDERATIONS

Biological materials such as genetically modified organisms (GMOs), quarantined materials, and live animals have their own transport requirements that also need to be fulfilled. If you want to use these materials then please do the training specific for those materials.

Guidelines for transporting biological materials by vehicle - car, truck, bus or train.

You might need to transport biohazards (experiments or waste) from one campus to another by car, truck, bus or train.

You will need to package and label your samples to ensure that, no matter what happens to the package during transport, they will not:

- become contaminated by the environment
- escape containment to contaminate people or the environment.

Transporting biological materials by land vehicle is a regulated activity, and you must do it following these regulations, that are summarised in these Guidelines:

- The IATA Dangerous Goods Regulations.
- The Australia Post, Dangerous and Prohibited Goods and Packaging Guide.
- Australian Code for the Transport of Dangerous Goods by Road and Rail.
- Packaging for surface transport of biological material that may cause disease in humans, animals and plants (AS 4834).
- United Nations Recommendations on the Transport of Dangerous Goods. Model Regulations.

BIOHAZARDOUS DANGEROUS GOODS CATEGORIES

You must either double or triple contain your microorganisms, depending on the microorganism.

Category A biological materials are:

- infectious substances which are capable of causing permanent disability, or a life-threatening or fatal disease to otherwise healthy humans or animals.
- Infectious agents of plants that could cause significant damage to the environment or agriculture are included in this category.

(There is a list of examples in AS 4834)

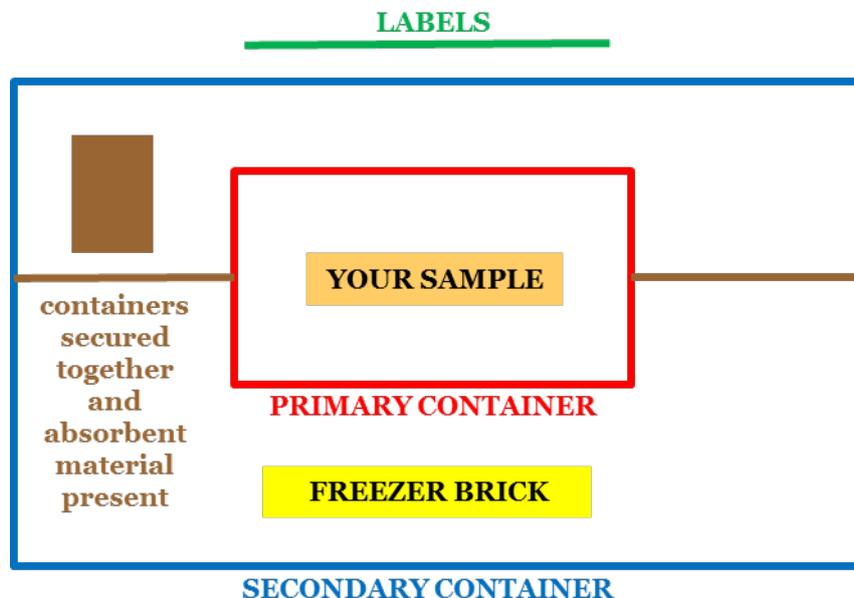
You must package Category A in triple-containment, high integrity packaging such as IATA Packaging Instructions 602 or Packaging Instructions 650 as used for air transport – see the Guidelines for post or plane.

Category B biological material - infectious substances that do not meet the criteria for Category A.

Category C biological material - substances with a low probability of causing disease in humans, animals or plants.

- samples from healthy plants
- samples from healthy humans and animals including excreta, secretions, blood and its components, tissues and tissue fluids.

Category B and C materials need to be double contained as described below.



PRIMARY CONTAINER

- Must be sealed.
- Must be surrounded by enough absorbent paper towel to soak up the volume of liquid inside.
- Must be secured inside the secondary container to prevent movement.

SECONDARY CONTAINER

- Must be sealed.
- Must be rigid, solid, durable enough to survive a car accident.
- Must be larger than a 5cm cube.

Note: a polystyrene esky is not suitable.

LABELS

- A biohazard symbol.
- A brief description of the contents.
- The name and contact phone number of a researcher not accompanying the package, a Facility Manager, or the Biosafety Advisor.

REFRIGERANTS

- Use freezer bricks rather than wet ice.
- If you want to refrigerate your package using dry ice (carbon dioxide) or liquid nitrogen then those are Dangerous Goods and have their own safe handling practices and regulatory requirements that are not covered here. Avoid using these refrigerants, but if you need to then you need to find out how to do so safely.

HIGHER CONTAINMENT CONSIDERATIONS

Biological materials such as genetically modified organisms (GMOs), quarantined materials, and live animals have their own transport requirements that also need to be fulfilled. If you want to use these materials then please do the training specific for those materials.

Guidelines for transporting biological materials by post or plane.

You might need to transport biohazards (experiments or waste) by post or by plane.

You will need to package and label your samples to ensure that, no matter what happens to the package during transport, they will not:

- become contaminated by the environment
- escape containment to contaminate people or the environment.

Transporting biological materials by post or plane is a regulated activity, and you must do it following these regulations, that are summarised in these Guidelines:

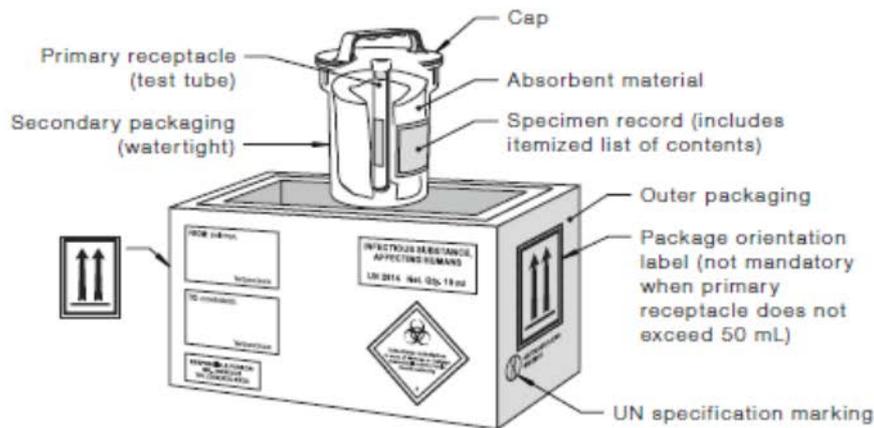
- The IATA Dangerous Goods Regulations.
- The Australia Post, Dangerous and Prohibited Goods and Packaging Guide.
- The International Maritime Organization (IMO), International Maritime Dangerous Goods Code (IMDG Code).
- The Office of the Gene Technology Regulator (OGTR), Guidelines for the transport of GMOs.
- United Nations Recommendations on the Transport of Dangerous Goods. Model Regulations.

When transporting by post or by plane, the requirements for packaging and labelling are different depending on what biological materials you are transporting.

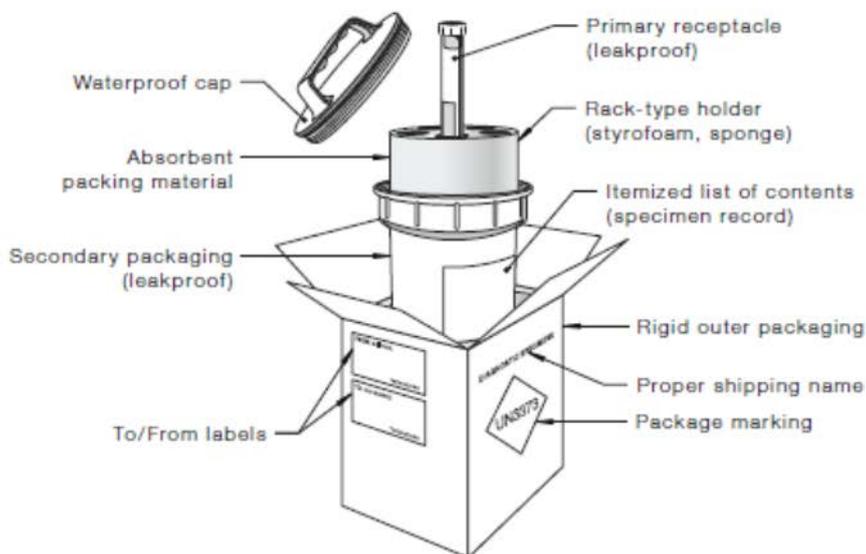
If you are transporting material that is infectious towards humans or animals then it is classified as a Dangerous Good. Similarly, if you are transporting material that could contain

microorganisms that could be infectious towards humans or animals (such as blood samples) then it is also classified as a Dangerous Good. See the section above for the different Categories of Dangerous Goods.

You need to be qualified in order to pack a Dangerous Good for transportation. World Courier runs training courses for packing Dangerous Goods. Or you can get the qualified staff of a courier company (such as World Courier) to pack your samples for you. The diagram below, from A/NZS2243.3:2010, shows the packing and labelling requirements.



(a) Packing and labelling of Category A infectious substances



(b) Packing and labelling of Category B infectious substances

FIGURE 3 EXAMPLES OF TRIPLE PACKAGING SYSTEMS

MORE INFORMATION:

In Australia, Item 92.120 of the Civil Aviation Safety Regulations specifies required training for packing dangerous goods for transport by air. All persons who pack dangerous goods for transport by air (including enclosing the goods in packaging, marking or labelling the consignment or preparing a shipper's declaration) are required to successfully complete a course approved by the Civil Aviation Safety Authority, Australia.

The IATA Dangerous Goods Regulations define the requirements for certification, packing instructions, the maximum quantities that can be transported by cargo or passenger aircraft, the external labelling requirements (including the identifying UN number), and the details to be included in the attached Shippers Declaration for Dangerous Goods.

The Australia Post dangerous and prohibited goods and packaging guide is a source of useful information.

When transporting biological materials that do not contain microorganisms infectious to humans or animals, then you just need to double contain your samples to withstand the conditions of the journey.

These will include variations in temperature and air pressure, plus the physical rigours of being crushed under other items in the cargo hold of the plane. In the picture above, you can see features of packaging including multiple layers of sealed and rigid containers, padding and bunding between the layers, and labelling to identify the contents – all of these features will be needed for your packaging.

Australia Post or a courier company can help you to pack your materials to survive the journey. Always use packing materials designed for the purpose. Always fill in all the information that is asked for on the outer labels of the packaging – if you leave any of it blank then your package may seem suspicious and be stopped by the security systems of the post office or airport.

REFRIGERANTS

- Use freezer bricks rather than wet ice.
- If you want to refrigerate your package using dry ice (carbon dioxide) or liquid nitrogen then those are Dangerous Goods and have their own safe handling practices and regulatory requirements that are not covered here. Avoid using these refrigerants, but if you need to then you need to find out how to do so safely.

HIGHER CONTAINMENT CONSIDERATIONS

Biological materials such as genetically modified organisms (GMOs), quarantined materials, and live animals have their own transport requirements that also need to be fulfilled. If you want to use these materials then please do the training specific for those materials.

OTHER CONSIDERATIONS

- Before you send a biological sample, you must advise the recipient to expect it.
- If you ask someone to send you a biological sample, then it is your responsibility to tell the sender to pack the sample following the regulations in this Guideline.
- Biological samples entering Australia will be subject to quarantine – you can find out information about quarantine in this manual.

- Unpack packages carefully, and in a biosafety cabinet if necessary, in case the containers have broken during transport.

Links to documents that regulate the transportation of biological materials.

- [The IATA Dangerous Goods Regulations](http://www.iata.org/publications/dgr/Pages/index.aspx) (http://www.iata.org/publications/dgr/Pages/index.aspx)
- [The Australia Post, Dangerous and Prohibited Goods and Packaging Guide](https://auspost.com.au/content/dam/auspost_corp/media/documents/dangerous-and-prohibited-goods-guide.pdf?fm=search-organic) (https://auspost.com.au/content/dam/auspost_corp/media/documents/dangerous-and-prohibited-goods-guide.pdf?fm=search-organic)
- [Australian Code for the Transport of Dangerous Goods by Road and Rail](https://infrastructure.gov.au/transport/australia/dangerous/) (https://infrastructure.gov.au/transport/australia/dangerous/)
- [The International Maritime Organization \(IMO\), International Maritime Dangerous Goods Code \(IMDG Code\)](http://www.imo.org/en/OurWork/Safety/Cargoes/DangerousGoods/Pages/default.aspx) (http://www.imo.org/en/OurWork/Safety/Cargoes/DangerousGoods/Pages/default.aspx)
- [The Office of the Gene Technology Regulator \(OGTR\), Guidelines for the transport of GMOs](http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/transport-guide-1) (http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/transport-guide-1)
- Packaging for surface transport of biological material that may cause disease in humans, animals and plants (AS 4834). ([all Australian Standards are accessible through the library](#))
- [United Nations Recommendations on the Transport of Dangerous Goods. Model Regulations](http://www.unece.org/?id=3598) (http://www.unece.org/?id=3598)

Biological containment facilities

Curtin University has several biological containment facilities that are used to contain its biohazardous microbiological/plant/animal research and teaching activities.

Curtin has a number of research facilities that are [Certified](#) by the [Office of the Gene Technology Regulator \(OGTR\)](#), in which teaching and research with genetically modified organisms can be undertaken. There are PC1-level, PC2-level and PC3-level laboratory, plant, and animal facilities available.

Curtin has a number of research facilities that are [Approved Arrangements](#) (http://www.agriculture.gov.au/import/arrival/arrangements) by the [Department of Agriculture](#), in which teaching and research with quarantined biosecurity materials can be undertaken. There are QC2-level lab, plant, and animal facilities available.

If you would like to access any of these facilities, please contact the [Biosafety Advisor](#), who will direct you to contact the Facility Manager in charge of an appropriate facility. Alternatively, you can apply to have your current facility Certified or Approved, by contacting the [Biosafety Advisor](#).