

Vacuum Freeze Drying Services

Both the National Library of New Zealand and Archives New Zealand have vacuum freeze drying chambers, and provide freeze drying services for water-damaged materials on a cost-recovery basis.

Vacuum freeze drying uses sublimation to dry large amounts of wet paper-based materials that have been frozen. The frozen materials are placed in a vacuum chamber on metal racks. When these racks are heated, the frozen water goes directly from the solid (ice) phase to the gaseous (water vapour) phase without passing through the damaging liquid water phase.

Large amounts of paper-based materials can be dried quickly, and with no further damage such as mould growth, soluble inks, distortion, or pages sticking together that will happen with uncontrolled drying.

The following steps should be taken to get the best results with freeze drying:

- Separate material into packages less than 90mm deep using freezer paper or plastic bags
- Water-proof identification of the package contents on the outside
- Flash freeze immediately after packaging and keep frozen

Contact us

Urgent disaster advice and freeze drying services

Archives New Zealand
Te Rua Mahara o te Kāwanatanga
Preservation Services
Tel 04-495 6221
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National Library of New Zealand
Te Puna Mātauranga o Aotearoa
Duty Disaster Manager
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Disaster planning and training

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National Library of New Zealand
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Disaster Response

For organisational records and documentary heritage

Vacuum Freeze Drying Services



Everyone in New Zealand caring for documentary heritage collections or organisational records needs to be prepared to deal with disasters.

These can range from small incidents like leaks to major events such as floods, earthquakes, or a devastating fire. Here is some information to help you prepare to manage disasters large and small.



Prepare

Basic disaster preparedness includes:

Preparing a written disaster plan

- Compile all disaster information in a single document
- Review it regularly
- Store copies off-site
- Make sure staff are familiar with your emergency procedures and know what they must do in the event of a disaster

Identifying risks

- Maintenance problems
- Flood risk locations
- Unsecured shelving
- No protective packaging

Recording information

- Compile identification and registration methods
- Keep complete and accurate lists
- Keep a list of the people responsible for collections and records
- Compile types of materials and appropriate salvage methods

Identifying assistance

- Know where to get specialist help
- Confirm insurance coverage

Respond

Be aware that in an emergency we may make decisions that put ourselves at risk. The first step should always be to make sure that all people are safe, and then take care of collections and records.

Wear protective clothing when working in a disaster site

- Sturdy footwear and work clothes
- Gloves for protection against sharp objects and contamination
- Face masks for protection against contamination and mould
- Eye protection and a hardhat

Take protective measures

- Eliminate the source of the problem, if possible, by measures such as turning off taps or diverting water flows
- Provide protection for collections in situ – for example, cover with plastic sheeting

Proceed

Access to site

- Access to the site following the disaster/ incident may depend on the level of damage. When damage is severe, there may be a longer period of time before clearance is given by the emergency services and assessment, salvage and recovery activities can begin.

Assess and plan

- Record the damage and identify necessary salvage activities
- If possible, prepare an assessment area for the salvaged materials
- Collect sturdy containers like plastic bins to move and store the salvaged materials
- Gather salvage supplies or equipment identified in your disaster plan

Salvage

- Work methodically and identify everything as you salvage
- Move items from the disaster site to the assessment area and identify priorities
- Carry out priority work first – some materials must be salvaged as soon as possible while others can wait or be stabilised by freezing

Recovery

- Separate salvage and recovery activities to ensure that salvage is completed first
- Identify priorities and develop an overall recovery plan