



ETHER

The pursuit of an ETERNAL HERITAGE



Product Spotlight: Oxygen Free Storage

Twice a month ETHER Conservation will highlight one product from our conservation and preservation range in this section, as it is hard to determine what products work best for you without knowing a little about them.

Product Spotlight will also highlight new products being developed for conservation.

This mailing will be highlighting Oxygen Free Storage. Oxygen absorber packets have been used extensively in the food and electrical packaging industry and more recently for the conservation and preservation of a wide variety of cultural objects such as medals, coins, bone, clothing, etc.



Why use Oxygen Free Storage?

- They are used within high oxygen barrier film that sealed with or without a vacuum. The long term packaging of museum/heritage objects requires packaging materials that are virtually impermeable to oxygen and moisture.
- Many of these objects contain modern or synthetic substances that can deteriorate even in the best conventional archival.
- Helps create a pest-free environment in museums

Tips to consider before using Oxygen Scavengers will be placed at the end of the mailing, after an explanation of the different types have been given.

The RP (Revolutionary Preservation) System

The RP System is a handy packaging system that protects artefacts from retro-gradation, creating an atmosphere without oxygen, moisture or corrosive gases, which are the main causes of metal oxidisation. There are two different types of RP agents. Type A and Type K.



RP System™ Type A

Removes: Oxygen, moisture and corrosive gases

Mitsubishi RPA 'stops the clock' on the sources of corrosion and oxidation of metals through a chemical reaction that removes oxygen, moisture and corrosive gases from sealed containers. It is used in metal conservation and other applications where a low RH is required i.e. geological specimens. It may also have applications for the storage of audio tapes where oxygen and moisture are primary sources of deterioration. Research is underway to determine the range of applications.

RP System™ Type K

Removes: Oxygen and corrosive gases

This type of scavenger should, for example, be used for organic objects or for metals that are combined with organic material such as wood or bone. RP type K can also be used for leather, paper and textiles etc.

It does not affect the moisture in a container to protect photographs, films, dyed products from discolouring and fading (UV Light damage is stopped with the absence of oxygen). RPK also prevents mildew and insect damage to paper, textiles and wooden artefacts. RP type K can also be used for leather, paper and textiles etc.

Ageless Oxygen Absorbing Sachet

Removes: Oxygen

Ageless® Z scavengers are used in conjunction with moisture permeable, transparent, laminate, oxygen barrier bags – similar to our ArchiPress Pouches – and are recommended as an insecticide of non-metal artefacts for short periods of around one month. Escal™ or Aluminium Foil should not be used because they will retain the moisture given off during the active period of the Ageless Z.

However, if the high humidity adversely affects the artefacts, even if it is for a short time, add some silica gel or use RPK.

Vacuum Packing

Vacuum Sealing Machines remove the air from a bag, sometimes replacing it with inert Nitrogen, then hermetically seal the package to give long-term oxygen free protection for the contents. For operator safety, CXD offer an exhaust which allows a hose to be attached to extract dangerous mould spores that can be present when dealing with old, wet or damaged texts.

Operator Safety

CXD Vacuum-Sealing Machines remove the air from a bag, sometimes replacing it with inert nitrogen, then hermetically seal the package to give long-term, oxygen-free protection for the contents. Two types of machine are offered, Chamber and Vacuum Impulse. For operator safety CXD offer an exhaust which allows a hose to be attached to extract dangerous mould spores that can be present when used for Squelch Drying water-damaged documents.



Protection

High oxygen barrier enclosures like ArchiPress pouches give the conservator a new weapon in the struggle to resist the persistent decay caused by time, pests and disasters. The strong air and watertight pouches give additional protection against acidity, atmospheric pollution, floods, fire extinguishers, damp, mould, mildew, insects, vermin, careless handling and damage in transit. Anoxic enclosures are used for pest eradication, disaster recovery and 'Squelch' drying and to slow down oxidation and damage from UV light.

5 Tips when considering the use of oxygen free storage:

1. It is not recommended to use a hard, rigid plastic container such as Tupperware. This is due to the RP agent lowering the pressure in the container which in turn will lead to the deforming of the container. If you have chosen to use a rigid plastic container please place it in a seal gas barrier bag which will contain the scavenger.
2. Ensure that all items that have projections are wrapped before being placed in the package with the RP agent. Wrapping of the projectiles will prevent a pinhole from being created once the RP agent is placed in the container. Note! Do not use RP-A if your cushioning is organic based, as it will absorb the moisture and lead to the deterioration of the wrapping.
3. It is not possible to re-use RP agents like a silica gel. Scavengers cannot regenerate its preserving ability. It absorbs oxygen, corrosive gasses or moisture by irreversible chemical reactions.
4. Scavengers are usually sold in packs of 10 -100. Sometime not all scavengers can be put to use immediately but these can remain un-used as long as it is stored correctly. No air or very little air should be allowed to enter the container of the scavengers/RP agents as this will lower carrying capacity of the absorbers.
5. It is not necessary to vacuum-pack a package that will contain a RP agent. The RP agent will further decompress the package as it absorbs oxygen and this will lead to the object coming into contact with the surface of the packaging.

For more information on the products above or to order conservation materials please contact Sholeen at sholeen.sanker@ether.co.za or have a look at our [website](#). Catalogues can be downloaded from our website.

* The ETHER Initiative is a programme of Roger Layton Associates (Pty) Ltd

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