

(not forgotten)



**WHAT TO INCLUDE IN  
PHYSICAL CONTAINERS**

# WHAT TO INCLUDE IN PHYSICAL CONTAINERS

Careful consideration of what to include in the container

Deterioration of one material in the time capsule can lead to deterioration of the other materials contained in the time capsule, since they are in a limited, closed space together.

Minimize the risk of unexpected chemical interactions among the time capsule contents by packaging each item: put each item or group of like items in acid- and lignin-free paper envelopes, folders, or boxes; uncoated PET zipper bags; or glass or PET, HDPE, or PP plastic vials with screw-top lids

<b>Glass items</b>	DO INCLUDE	
<b>Stone; ceramic;</b>	DO INCLUDE	
<b>Non-corroding metals</b>	DO INCLUDE	
<b>Coins</b>	Wrap in antitarnish cloth and place in a foil and plastic bag	
<b>Books</b>	<p>DO get a storage container that lays horizontally and that encloses the book entirely. It also needs to be made of acid-free and lignin-free materials.</p> <p>Also 100-percent-cotton fabric to wrap the book before it is stored in the box.</p> <p>Keep it out of the light entirely and keep it in a cool, dry space.</p> <p>Deacidification with a nonaqueous spray that neutralizes acid in paper and leaves an alkaline reserve</p>	<p>Thereby prolonging the life of a book up to 300 percent, as proven in tests conducted by the Conservation Division's Research and Testing Laboratory.</p> <p>Heat, light and moisture all speed the decay of cellulosic materials (which is what the paper of the book is made of).</p>
<b>Videos</b>	Include instructions on any intended playback equipment. For computer tapes, add a written copy of the software, and identify the computer type.	<p>Include video or audio tapes or compact disks, the equipment to play them back may not be available when the time capsule is opened. Furthermore, the tapes or disks may have deteriorated.</p>

## CD's

Plastic and foil envelope  
Create a capsule in a capsule

The problem of plastics is compounded if a plastic object is the medium for information (as with CD's or video tapes).

CD deteriorating may compromise the environment so shield other objects from the harmful effects of any gases they may emit through the years.

Off-gassing caused by degradation of the plastic CD or the low-grade plastic ID and wallet cards could cause coins and other metals to pit and corrode

Machine-readable media such as a CD or computer disk or videotape usually need to be eliminated because playback equipment probably will not be available in 100 years.

## Printed Items and Documents

Items printed or written with carbon-based ink on acid- and lignin-free, good quality paper;  
They should be placed in archive quality, acid-free paper products and boxes.

Make a preservation (long-lasting) photocopy / What is a preservation photocopy?

Use paper that meets the ANSI/NISO standard Z39.48 - 1992 (R2002) for permanent paper ("Selections from North American Permanent Papers," Abbey Newsletter), in an electrostatic photocopying machine with well-fusing toner containing carbon black as the pigment. See Archives: Preservation Through Photocopying [PDF: 891 KB / 4 p] (National Park Service) and Archival Copies of Thermofax, Verifax, and Other Unstable Records (National Archives and Records Administration).

A simple peel test can help determine whether the machine and toner produce a well-fused image ("Testing Electrostatic Copy Quality: The Peel Test," National Archives and Records Administration).

Plastics are not the best thing to store old documents in

<p><b>Photos</b></p>	<p>Fiber based          Black and white are better          Interleave the photos or sleeve them with archival quality photo envelopes.          Certain plastics are highly recommended for long-term storage. If photos are involved, make sure the product has passed the Photographic Activity Test (PAT).          DO treat with gold, selenium or poly-sulfide toner          DO Remember to also document what the contents are. If there are people in photographs, document them.</p>	<p>Color prints and slides can fade even when kept in the dark.          To keep photo emulsion surfaces from sticking together          If so, most products will advertise this fact.</p>
<p><b>Photographic films</b></p>	<p>Photographic films coated on a polyester base rather than an acetate base</p>	<p>Polyester bases are more stable.</p>
<p><b>Newspapers</b></p>	<p>DO make photocopies on archival quality paper (high-alpha cellulose) with an alkaline reserve of pH 7.5-8.0.</p>	<p>Newsprint is acidic and deteriorates easily. A local museum or library should have names of paper conservators.</p>
<p><b>Objects made of rubber</b></p>	<p>Should not be placed in time capsules</p>	<p>Since rubber deteriorates over time, releasing sulfur.</p>
<p><b>Wood objects</b></p>	<p>Must be sealed away from electronic equipment or metal articles, especially those made of lead, or lead-containing alloys, in the time capsule.</p>	<p>All wood, especially oak, gives off acid vapors</p>
<p><b>Textiles</b></p>	<p>Textiles made of non-plastic fibers are best; should be clean and insect free.</p> <ul style="list-style-type: none"> <li>• Cotton: Acts as a humidity buffer if temperature changes.</li> <li>• Polyester: Stable.</li> <li>• Silk: May deteriorate in oxygen atmosphere.</li> </ul>	<p>All wood, especially oak, gives off acid vapors</p>
<p><b>Hair (and wool)</b></p>	<p>DO NOT INCLUDE unless in a glass vial</p>	<p>Contain sulfur; may outgas and corrode metal.</p>
<p><b>List of objects</b></p>	<p>DO INCLUDE A complete list of contents describing color and material of every object</p>	<p>Since objects can change over time.</p>

<p><b>Polyvinyl acetate (PVAC) or PVC, including plastic food wrap</b></p>	<p>DO NOT INCLUDE</p>	<p>Will deteriorate even in a sealed capsule and release acetic acid and hydrochloric acid, respectively, as they age.</p> <p>Because the aging characteristics of some plastics are not good and others are not truly known, these materials cannot be counted upon to survive in their original form.</p>
<p><b>FOOD</b></p>	<p>DO NOT INCLUDE</p>	
<p><b>PLANTS</b></p>	<p>DO NOT INCLUDE</p>	