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## NF93-135 Preservation, Care and Display of Glass

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## Preservation, Care and Display of Glass

*Shirley Niemeyer, Extension Specialist, Home Environment*

Glass can be damaged by the environment it is in. Preventive measures in caring for glass will help insure its continued use and existence as a family keepsake.

### Environment

Glass is affected by light, heat and moisture. Deterioration is sometimes difficult to detect.

### Temperature

Antique glass is brittle and should not be exposed to extremes in temperature. Store valued glass items in a stable environment away from heating and cooling vents, fireplaces, etc. The possibility of damage increases with sudden changes in temperature and relative humidity. Glass objects may shatter when taken from a warm area to a very cold one.

### Humidity

A relative humidity of 45 to 50 percent is suggested for glass. Ideally, the relative humidity should not vary more than 5 percent above or below the normal relative humidity level. A rapid drop in the relative humidity may also cause condensation within a glass item. If the moisture remains for long, it may change the chemical structure of the glass and damage its appearance. Do not store valuable glass in a damp place such as a damp basement or attic.

Moisture from the air may affect certain glass that has a large amount of alkali salts. This type of glass may be attacked in the air, leaching the alkali and causing tiny cracks in the surface as a result of moisture and drying fluctuations. This process is crizzling — a fine surface networking of crazing.

### Light

When glass is exposed to ultraviolet light, manganese dioxide (a decolorizing agent used primarily from 1880 to 1914) becomes "photo-oxidized" and turns pink or violet. The process is slow but will

permanently alter glass containing manganese dioxide. Many old telegraph insulators are examples. Glass may also contain selenium, a decoloration that photo-oxidizes to an amber color. Selenium was used primarily from 1914 to 1930.

Avoid placing valued glass keepsakes in sunlight or use ultraviolet filters to prevent these changes. Sunshine can also cause changes in temperature and relative humidity.

## **Cleaning**

First examine the surface for cracks and previous repairs under light and with a magnifying glass if possible. Consider the type of glass and value of the keepsake. If in doubt about the glass and methods of cleaning, consult a museum curator, glass expert, or other resource. If glass has been repaired, avoid cleaning it or clean without immersing it in water as the adhesive may be damaged. It is better to do nothing than risk damage to a keepsake you value highly.

Rarely-used glass should be washed occasionally. Dust and grime build up to invite corrosion. Glass should also be dusted. Wear on glass can be caused by dust which is filled with abrasive particles. Abrasive particles cut into the bottom of the glass, or the lip if stored upside down, as it is moved around. The insides of glass may show scratches, which can result from regular wiping with a dry cloth.

Glass in good condition can be washed in warm, soapy water. Do not use hot water. Avoid using harsh abrasive or strong detergents on gold, silver, enamel or lustre color applied to glassware. Use a mild, good quality detergent or a deionized soap such as "Orvus." Distilled water should be used for washing, but room temperature tap water will work. Adding a small amount of a water softener product to the water (e.g. Calgon\*) will prevent chemical build-up and filming on glass if the water is hard.

Wash each piece in a plastic container or line the bottom of the sink with a towel to avoid glass breakage. The water faucet can also be covered with a protective cloth. Use room temperature water for rinsing. Add 5 percent ammonia to the final rinse. Ammonia, however, should NOT be used on glass with metallic decoration.

Drain and dry the glass to prevent surface deterioration. Water trapped inside items will, over time, pit and dull the item. Dry glass with a soft lint-free cloth. Avoid storing bottles or decanters with their stoppers in place as condensation can result.

Extremely soiled glass bottles and items can be cleaned by soaking overnight in a mixture of a water softener product, detergent and water. Then add a handful of uncooked rice and gently swirl to dislodge any dirt. The bottle should be at least half full of water. Use about four tablespoons of rice depending on the size of the bottle. Rinse. To avoid clogging, do not pour the rice down the drain. Fine sand may also be used. This method IS NOT suited to all glass. Old organic deposits such as dried milk or food may be difficult to remove. Soak in a solution of deionized soap, ammonia, and water if the glass is in good condition. A 20 to 30 percent solution of hydrogen peroxide in water may bleach the stain if the soak does not work.

Avoid using the dishwasher for valuable glass keepsakes. Some types of glass (the types are not predictable) will develop an amber or multicolored iridescent film (silica film) or a cloudy film (etching). Both are usually caused by a combination of water and dry temperatures that are too high, insufficient rinsing, use of alkaline washing solutions and/or soft or softened water, and are irreversible.

Crystal chandeliers and candelabra can be cleaned with a cloth moistened with alcohol or a solution of

ammonia and water. Test first and handle with care.

## Display and Storage

Metal can scratch or stain glass and is not recommended to hold or store glass items.

A thin piece of padding such as expanded polyethylene can prevent breakage and shocks when setting glass objects down.

In storing, pack each piece separately in tissue and cushion each piece with a layer of air-cap or bubble-wrap or expanded polyethylene. However, because these wraps may contain unstable substances, wrap the glass in acid-free tissue first for long term storage. Be sure items are completely dry before packing. Label carefully.

Avoid using valued glass items for storing liquids for any length of time. Store stoppers separate from bottles. If a stopper should become lodged, place the item in the refrigerator to contract. Remove stopper. Remember to slowly bring the item back up to room temperature to avoid shattering the item.

## Resources

Seek expert help in any matter concerning the care of rare and valued glass keepsakes. If there are no local sources, contact the Nebraska State Historical Society, Lincoln, Nebraska or write to Corning Museum of Glass, Corning, New York 14830.

Consult the Fact Sheet on *Sources of Supplies for Preservation* for additional information on locating supplies for conserving glass items.

\*Trade names used in the publication are for information only and do not imply endorsement of products named nor criticism of similar products not mentioned.

## Sources

- Barbara Lang Rottenberg, *Care and Display of Glass Collections*. Nashville, TN: American Association for State and Local History, Technical Leaflet No. 127, 1980.
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