



Conserve O Gram

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Care of Alabaster

Alabaster, a beautiful, translucent, fine-grained stone, has been prized for thousands of years. It is similar to marble, and the two stones are often confused. Alabaster has been quarried for centuries in Italy and Egypt, although most so-called alabaster artifacts from ancient Egypt and Rome are actually marble. Adding to the confusion, the term “onyx” has been applied variously to marble, alabaster, and true onyx, which is a form of quartz.

The smooth, translucent appearance of alabaster resembles highly polished marble or onyx. The variety of color and veining seen in various types of alabaster is also reminiscent of colored or white marble. However, it has some very different properties that can lead to problems if improperly cleaned, stored, displayed or handled. This *Conserve O Gram* describes the properties of alabaster objects and offers some tips on how to care for them.

What is Alabaster?

While it usually contains a variety of other minerals, alabaster is made up primarily of one main defining mineral. Alabaster is the fine-grained form of the mineral gypsum (calcium sulfate). Marble, especially white marble, is mainly calcite (calcium carbonate). They are both metamorphic rocks, formed geologically under high pressure and temperature. Alabaster is also sometimes confused with steatite (soapstone), another soft, easily polished stone. Steatite is comprised of the mineral talc, which is even softer than alabaster.

This basic difference in the chemical composition between alabaster and marble accounts for their

very different properties. Alabaster is readily water soluble, while marble is not. Alabaster is softer than marble, however it can be polished to a high, translucent gloss making its surface look deceptively hard and glass-like. This is an attractive property to artists and artisans, who have fashioned delicate carvings and thin-walled, translucent objects such as vases, lamps, and lantern shades from the easily worked material. However, alabaster is extremely brittle and is easily bruised. It can be scratched with a fingernail.



Figure 1. Alabaster carving of a recumbent dog.
Photograph courtesy of Lea McNabb

Identifying Alabaster Objects

Most alabaster objects are found indoors, due to their vulnerability to moisture. A wide range of alabaster artifacts can be found in many historic house collections and museums, from the mundane to the exotic (knobs, finials, letter openers, ashtrays, bookends, chess pieces, sculptural busts, jewelry items, and furniture ornaments, to name only a few). Medieval alabaster reliefs have found their way into collections in North America, as have religious articles such as alabaster altarpieces and figures of Spanish, French, and Italian origin. These pieces are generally finely carved, smoothly

polished, and are often painted and decorated with gilding. In Europe, Asia, and North America, a long tradition of making alabaster figurines and small sculptures for collectors and tourists still thrives. Decorative household objects such as boxes, lamps, and lampshades are also common. Some early doll's heads and limbs were painted alabaster, and alabaster inlay is found in furniture and other objects. In addition to these artworks and artifacts, some alabaster specimens may be included in natural history collections. Many sculptures and artworks incorporate alabaster with other materials, including various types of stone, wood, and metal. For example, some contemporary American Indian artists use alabaster as a medium for sculpture, often with inlaid or attached components.

Identification of alabaster is difficult without destructive testing. Scratching it or testing its resistance to dilute hydrochloric acid (to distinguish it from marble) are not appropriate practices for historic artifacts or artwork. Surface coatings can complicate the identification of alabaster. Examination under ultraviolet light may help identify the presence of coatings, repairs, or restorations, but alabaster itself does not fluoresce under UV light in a way to distinguish it from marble or onyx. If the surface is highly translucent and no pronounced crystalline grain is visible, it is best to assume it is alabaster and to take appropriate measures to protect and preserve it.

Deterioration and Damage

Alabaster, being both brittle and readily dissolved in water, is prone to breakage and deterioration if handled or stored improperly. It is easily scratched and bruised. But more damage has probably been done by well-meaning attempts at cleaning.

The extremely fine grain of alabaster makes it less porous than some marbles, but it is still permeable by water and soluble salts. It is also easily stained. Grime and dirt become embedded in the surface. Soiling can be extremely difficult to remove, especially if the alabaster has reacted with moisture to form re-precipitated gypsum on the formerly smooth surface. The microscopic blade-like gypsum crystals lock dust and grime in place. This property makes alabaster much more difficult to clean than marble.



Figure 2. Metal etagère with alabaster finials and platform, showing typical staining of alabaster presumably from watering plants.

Photograph courtesy of Tim Gurley

Airborne pollutants can cause discoloration of alabaster, usually seen as yellowing. Yellowing may also be caused by previous coatings or cleaning products. Strong acids and alkalis can cause discoloration, sometimes by reacting with iron-containing minerals in the alabaster.

In the past, cleaning alabaster objects routinely included using a fine abrasive to re-polish the surface after aggressive removal of embedded soiling, followed by the application of a coating of wax or oil to help bring out the translucency and colorful richness. In addition to the obvious damage caused by such cleaning practices, these coatings often pose problems over time. Oils darken and become opaque, often leading to a yellowed or brownish appearance. Waxes, especially after repeated applications over time,

accumulate dust and grime, which can become embedded in the stone.

Some alabaster sculptures, reliefs, and other objects have layers of decorative paint or gilding applied. These layers are extremely vulnerable to environmental conditions and careless handling. Much surface painting has been lost on older alabaster artifacts due to overzealous cleaning.

Damage often occurs when alabaster is combined with other materials in the construction of an object. For example, a constricting wooden or metal frame or mounting bracket can impart stress on the alabaster, resulting in breakage. Old repairs often were made with metal pins or “cramps” in the form of large staples, inserted into holes drilled in the alabaster. When these expand with temperature fluctuations or corrode from moisture, they can break the alabaster. Other repair materials found on alabaster objects can also cause further damage. These include plaster, and various adhesives that can shrink and become brittle over time.

Care of Alabaster

Cleaning. Although an alabaster artifact may appear to “need” cleaning, consider accepting the less than pristine condition as a “patina” of age, rather than risk harming the delicate surface. It is a good idea to keep loose dust and debris from accumulating, since these can attract moisture to the surface. Wiping with a cloth can cause static build-up, attracting soiling; instead, use a soft bristle brush, with masking tape wrapped around the metal ferrule to prevent scratching. If anything more than simple dry brushing is required, consult a conservator.

Unless you are certain there is a protective wax coating on the surface, resist the temptation to wipe or remove stains by rubbing with detergent solutions; even blotting fresh spills can drive the stain in, making it permanent. Where possible, let the stain dry and call a conservator.

Repair. If an alabaster artifact is broken or chipped, collect the pieces and loosely wrap them individually in a soft cotton cloth. Don’t rub or abrade the delicate break edges. Only a conservator should perform repairs. Resist the temptation to use an adhesive to repair broken alabaster objects. Break edges are deceptively soft and improperly chosen or used adhesives can result in staining or further damage to the edges.



Figure 3. A lamp base comprised of five separate turned and carved alabaster components, joined with a threaded steel rod. Over-tightening can cause damage to edges of the alabaster sections.

Photo by author

Handling. Always use gloves when handling alabaster. Finger oils will penetrate the surface and will eventually cause staining, or attract soil. Remove any jewelry that might potentially scratch the surface. Before handling an object, be sure to understand how any components fit together, and move components one at a time.

Interlocking parts such as lids and shades can chip easily if left in place.

Storage. Alabaster should be kept in a reasonably stable environment, since it will absorb and release water vapor in extreme relative humidity conditions. Avoid moisture contact of any kind. Individually wrap smaller items or components in unbuffered acid-free tissue or non-abrasive cotton cloth, placed in an archivally stable storage container or drawer. Larger objects should be protected from dust; these may be loosely covered in polyethylene sheeting held away from the surface of the object by an archivally stable framework or support system, such as shaped blocks of polyethylene foam or acid-free board. If condensation is a likely possibility, allow for airflow by avoiding a tight seal.

Exhibition. Minimize heat exposure of alabaster lamps and lampshades from light bulbs; reduce wattage, use a physically smaller bulb, or minimize the amount of time a lamp is illuminated on a routine basis. While light will not generally affect the stability or coloration of alabaster itself, it may harm applied coatings or

painted details. Securely affix unstable objects, but avoid using anything in contact with the alabaster that might abrade or scratch. Do not use sticky wax ("earthquake wax") to secure objects without consulting a conservator to assess the stability of the surface of the object.

References

Larson, John. "The Conservation of Alabaster Monuments in Churches." *The Conservator* 3 (1979): 28-33.

Penny, Nicholas. *The Materials of Sculpture*. New Haven: Yale University Press, 1993.

Simpson, Mette Tang, and Michael Huntley. *Sotheby's Caring for Antiques*. London: Conran Octopus Ltd., 1996.

John Griswold
Conservator
Griswold Conservation Associates, LLC
Beverly Hills, CA 90210
(310) 271-5255

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