

A Comparison Study for Epoxy Adhesives Used in Archaeological Glass Conservation

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The research discusses an important topic related to the conservation of glass antiquities, given the nature of glass, the ease of breakage, so the glass artifacts extracted from excavations are often in a state of shattering, in addition to the possibility of being broken inside museums and archaeological stores, whether this resulted from the wrong handling of it or a mistake during the restoration or from Wrong display of the glass object in the museum or others.

The basic restoration process in this case is the assembly and completion stages, and the basic material needed for the restoration process is the adhesive, and epoxy materials are the most used materials in assembling and completing glass artifacts. The research aims to find the best epoxy materials available in museums and archaeological sites in Egypt to be suitable for use in the conservation of glass archaeological.

The research deals with the study of five epoxy materials that are easy to find in archaeological sites and museums in Egypt. Where a comparison was made of those materials in terms of physical and mechanical properties and through the different aging stages, where samples of materials were exposed for the condition of the samples before and after aging, So that the changes were evaluated through a Colorimeter and ATR FT-IR analysis. The stages of work consist in making samples for each substance, performing tests to identify the properties of each substance, as well as exposing each set of samples to a different aging process from the other. Where the industrial aging was done by four different techniques as factors for damage (thermal aging - moisture aging - ultraviolet radiation (UV) - heat and humidity aging and U.V rays), So that the changes in the samples are studied according to the different aging techniques, and the study results in identifying the best materials selected for the study.