



# SAVING YOUR Treasures

*A Website about what you can do to protect and preserve the things of importance in your life*



## **Gerald R. Ford Conservation Center Nebraska State Historical Society**

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### **HOW DO CONSERVATORS CHOOSE AN ADHESIVE?**

When a conservator chooses an adhesive for a project, they consider an entire array of information and choices. Part of the array includes information about the object itself and part includes information about all of the adhesives available to choose from.

#### **Off the Shelf?**

Conservators do use some proprietary (off the shelf) adhesives, but usually they will make their own adhesives. For example, the adhesive that is in Elmer's® glue is one that is often used by conservators, but they rarely use the Elmer's® formulation. Instead they use a more purified version purchased directly from the resin manufacturer because the version sold in stores contains many additives that affect the long term characteristics of the adhesive. These additives are included because they increase shelf life, make the glue smell good and, yes, even make the glue taste better. They also cause yellowing and accelerated chemical cross-linking as the resin ages. Conservators choose the more purified version because it will last longer before showing some of these signs of aging and because they can pick the precise resin they want to use. The resin used in Elmer's® is one of a family of very similar resins. The conservator can choose the resin that fits their project the best from this family of similar adhesive resins.

#### **Strength:**

One might think that choosing a really strong adhesive would always be the best choice, but this is not the case. The adhesive should be as strong as it can be without being stronger than the material that is being glued together. The rationale behind choosing a weaker adhesive is that we hope, if the object breaks again at the same location, that the break will occur along the old repair joint and not in a new place. In other words we want the object to fail at the same location again so that new areas of damage are not created near the old damage.

**Reversibility:**

Conservators also consider reversibility in adhesive choice. We want to be able to “undo” a repair if we need to in the future. We hope that a repair can be removed without serious damage to the original materials of the object. Experience has shown us that objects often do get “re-repaired” in the future, often because a missing part is found or because the old adhesive has deteriorated or discolored.

**The Rest of the Array:**

Conservators also consider the physical and chemical characteristics' of adhesives such as tensile strength, creep, glass transition temperature, polarity, form, carrier, set time, and setting type when making a choice. For example, an adhesive might seem very good for a project, but may have an eight hour setting time. If the assembly and clamping process is complicated, the repaired object might shift during the eight hour setting period resulting in misaligned pieces, making this adhesive a poor choice for the project.

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