

Adhesives & Solubility

Throughout history, people have repaired objects with the best materials available. For example, the vessel below was repaired with a metal staple (now removed) and the storage jar was repaired with cord and plaster (now gone).



Vessel with Incised Heads
Maya, 250-500 AD
MCCM 1990.011.067



Storage Jar
Jericho, 1800-1500 BC
MCCM 1955.086

These old repairs often fail and/or the repair materials do not last. Better methods and materials are always being developed.



Failed
Joins

Scene of Departing Warrior
Greek, 460-450 BC
MCCM 1984.012 C

Variety of Adhesives

There are many different types of adhesives.
These adhesives may be soluble in different solvents.

Proteinaceous Glues

Acrylics



Cellulosics

Poly Vinyls

Epoxies

Solubility and Adhesives:

A Case Study from the Carlos Museum

This kylix had old repairs that were failing and needed to be taken apart.

**Kylix with
Symposium of Women**
Attic Greek, ca.500 BCE
MCCM 2006.018.003



Solubility and Adhesives:

A Case Study from the Carlos Museum



The kylix was placed in a vapor chamber (a plastic bag with solvent). The solvent vapors softened the adhesive, allowing the pieces to be taken apart.

Solubility and Adhesives:

A Case Study from the Carlos Museum



The kylix was reassembled with an acrylic adhesive.

Preparing the Tiles

In order to test the solubility of adhesives, tiles will be broken and then adhered with three different adhesives: cyano-acrylate, gelatin, and a polyurethane.



Breaking the Tiles



Preparing the Gelatin



Adhering the Pieces

Testing adhesive solubility



Testing Solvents



Vapor Chamber



Immersion in Water