



HELPFUL HINTS:

GLUES/ADHESIVES

Trying to decide what type of adhesive to use for your project can be confusing. There are so many different types of glues on the market today and the selection can have a critical impact on the outcome of your project. This guide will review the major adhesive families and the correct types to use for any application.

CA (cyanoacrylate) Glues:

Also called superglues, these glues have a quick setting and curing time. **They typically set up in 5-60 seconds and cure in about 2 hours.** These glues work well on **wood, metal, and plastic.** They must be applied to a clean surface and applied sparingly. A little goes a long way. CA glues come in different viscosities for different applications. Thin glues are very watery and should be applied to materials with non-porous surfaces. Thicker glues dry slower and can also be used to fill gaps in your models. Most CA glues will tend to fog clear plastic as they dry so keep it away from the clear parts of your models.

A word of caution, CA glues will instantly glue skin to itself or anything else. Keep some acetone, nail polish remover or glue debonding agent handy in case you get stuck!!!

Epoxy:

Epoxy glue is an extremely versatile, general purpose adhesive that has been around for a very long time. It can be used to bond **paper, metal, plastic, polyurethane foam, glass, fiberglass and wood** with smooth or porous surfaces. It can also be used for filling gaps. Epoxies come in a two part system that requires the epoxy and the hardener to be mixed before application. **Most epoxies dry in 5 to 20 minutes and completely cure in about 12 hours.** When dry, the epoxy is fuel proof, water proof and will not shrink. Epoxies do not work well on flexible surfaces.

Polystyrene Cements:

This is the main type of glue used to construct **plastic (styrene) models.** Polystyrene cement is actually a solvent that dissolves a thin layer of the plastic model and fuses it to the adjacent piece. You actually get a weld rather than a glued joint. When used on plastic models, apply sparingly as too much will warp and melt the plastic. **These cements set up in less than 1 minute and fully cure in 8 hours.** Polystyrene cement works best on clean plastic surfaces. Make sure that the pieces that are to be joined are cleaned of any paint or oily film.

These cements come in tubes and small application containers. These containers work better than tubes as they allow for direct application of just the right amount of glue with less wastage than tubes. You can also use bottles with brush applicators for larger jobs.

White Glues:

These are the glues that we used in school on all of our projects. These glues are made from polyvinyl acetate (PVA). They can be thinned with water, can be cleaned up with water and are very strong when dry. **These glues will set up in 10 to 60 minutes and will completely cure in 24 hours.** Although they are white in color when applied, they dry to a clear finish. These glues work well on **paper, wood, plaster, foam and other porous surfaces**, they do not adhere well to plastic, rubber or metal.

Yellow Glues:

These glues are sometimes called woodworking glue or carpenters glue. They have certain similarities with white glues as they can be thinned with water, can be cleaned up with water and have similar set up and curing times. However, yellow glues are considerably stronger than regular white glues and are waterproof when dry.

Multi-Purpose Adhesives:

There are several multi-purpose glues on the market besides epoxy. Most of these glues use synthetic resin additives and are designed to work on a wide variety of surfaces including **wood, plastic, paper, leather, cork and ceramics**. These glues work best if the glue is applied to both surfaces being bonded.

Rubber Adhesives:

These glues use synthetic or natural rubber as a base and some use synthetic resin additives. They are flexible when dry and can therefore be applied to flexible surfaces. Many contact cements fall into this category.

What are you trying to glue?

Plastic models – use polystyrene cement

Metals – use CA glue or epoxy. Epoxy takes longer to set up but is more forgiving.

Porous materials like cardboard, wood and plaster – white and yellow glues. Contact cement can be used for large sheets of wood or paper.

Wood – Most glues will work on wood. The best choice will depend on what the wood is being glued to.

Most glues give off fumes that can irritate your skin, eyes and nose. Make sure that you use these products in a well ventilated area.