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Epoxy

Did you ever have your six-minute epoxy start setting up on you after one or two minutes? Epoxy manufacturers suggest that you mix your epoxy on a flat, wide open surface as opposed to a deep container. It seems that mixing epoxy in a deep container speeds up its chemical reaction time. If you still want to use a deep container, add a little alcohol (don't exceed 50%) to the epoxy to slow down setting time.

from Valley City R/C Club Newsletter Carl Koehn, Editor Parma Heights, OH

Another Side of Cyanoacrylate

We use CA every time we build a model, primarily because it dries fast. But what do you really know about it. Are all CAs the same? Is it toxic? Why do some curse its fumes? Why does it cost so much? How long will it keep your model together? Here are some of the answers.

CA isn't like any other glue. In the bottle it's a clear liquid, but when you glue two pieces together it changes. What it changes into is chemically like Plexiglas. CA polymerizes (cures, hardens) through the catalytic action of moisture … yep, simple water. On wood there is always some water present. When the humidity is high the curing is faster than when the air is dry. When you want to glue metal to metal it takes some help from a "kicker" because metal tends to be drier than wood.

Water is why CA gradually thickens and even cures right in the bottle. Water also affects the purity of CA. The best CAs are distilled until there is practically no water in them. When manufactured, water and other impurities are removed. All CAs are not equal. Purity affects the bonding strength.

There is only one manufacturer of CA in America, although there are a lot overseas. To make CA the major ingredient: ethyl cyanoacetate is added to a reaction vessel. A secret catalyst is added along with a few acidic stabilizers to help control the reaction. At this point there are $25,000.00 worth of chemicals in the reactor. The reactor is heated to 200 degrees and very accurately monitored for hours. If "over cooked" the liquid begins to turn yellow. When you buy CA look for this yellowing and reject it if you see it.

Next comes a distillation process. The vessel is heated and at a certain temperature only the raw CA monomer will evaporate. It condenses on the walls of the vessel and drains into another container. Here it is about 92% pure. Not good enough for balsa wood. Several more distillation processes take place before the CA can be put in bottles to ship to us.

After all of this you can see why the stuff is son expensive. As a matter of fact we do not use the best CA made. There are others that are further refined for specialty applications and they are more expensive yet.

To get long shelf life keep unopened bottles in the refrigerator. Buy the 2 oz. bottles and not the larger ones. Even the material in the bottle itself is critical. While they use polyethylene in these bottles it promotes deterioration.

When the CA begins to thicken it is absorbing water from the atmosphere. Do everything possible to keep the bottle sealed and don't get the nose of the bottle near any accelerator. Just having the open CA bottle near where you have sprayed "kicker" will contaminate the CA.

Now we come to the accelerator or "kicker". This is merely a mixture of aromatic amine and another liquid which will evaporate quickly. There is very little amine in the mixture and this is important so that the kicking takes place slowly. You want an accelerator that will not cause the CA to bubble as it cures. When you see the white surfaces on the CA it has been over kicked and the bond will be less effective.

Do you have some de-bonder around? Some de-bonder is made up of a mixture of nitromethane and/or acetone. Both of these chemicals are safe to use for de-bonding. De-bonder containing acetonitrile, better known as methyl cyanide, is highly dangerous and should not be used. If ingested the stomach acid mixes with it to produce hydrogen cyanide, a killer.

Condensed from RCM magazine

Formula 560

Have you tried Zap's Formula 560 for canopy adhesive? It replaces RC56.

Goop

Have you tried GOOP adhesive for modeling yet? Really does a good job. Dries clear and sticks like heck. Goop can be thinned with toluene or Xylene. Both of these thinners are dangerous if inhaled so be careful.

Removing Epoxy from your hands

To remove dried epoxy from your hands try white vinegar.