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# Colores™ Instructions

## What is Colores™?

Colores™ is a color epoxy product—organic compound that consists of two parts:

- The resin portion which provides the coloring.
- The hardener portion which controls the epoxy flow.

## Why use epoxy?

Epoxy provides a durable and permanent color finish. It also provides excellent adhesion of stones, beads, glass, metals and other materials.

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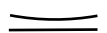


## **WHICH HARDENER DO I USE?**

For the best quality results, the correct hardener must be chosen. The hardener allows you to control the flow of the epoxy, based on the size and dimension of the piece and the area being filled. This allows you to achieve the ultimate goal: a smooth, flawless, glasslike finish.

### **Two points to understand:**

- Flow and viscosity.
- Surface tension or control (known as the thixotropic index).

First, analyze the piece to be painted. Use the recommendations below to determine the correct hardener. **Please Note:** One hardener will not work for all surfaces. Additives with certain hardeners will thicken the mix, giving you increased flow control. This enables you to paint on more dimensional surfaces. Remember, there is a limited range of effectiveness for each hardener. For optimum results, follow these recommendations:

- For a flat surface with walls use Colores™ thin hardener. 
- For a flat to slightly curved surface without walls use Colores™ thick hardener. 
- For a slight to moderately curved surface use Colores™ thick hardener with additive. 
- For severely curved and high-domed surfaces use Colores™ thick hardener with additive. 
- For surfaces that will be aggressively ground and polished, use DurenameI™ grinding hardener.

## **USING AN ADDITIVE**

To further restrict the flow of the Colores™ thick hardener, an additive can be used. Dispense the additive in drops using a needle cap on a squeeze bottle with a 21-gauge (green) needle. **Please Note:** The #30 additive is intended solely for use with Colores thick hardener.

### **Characteristics**

- Full-strength #30 additive drops offer immediate thickening. Use only the slightest amount.

### **Procedures**

1. Measure the desired amount of resin and hardener in the proper ratio, making sure not to exceed 90 drams total mixture. A larger batch will have a shorter pot life. Average pot life is 45 minutes at 75°F.
2. Add 1–5 drops of #30 additive to thick hardener only. Consider the shape of the surface to be coated in order to determine the correct viscosity.
3. Stir until an even blend is achieved. Mix drops thoroughly to avoid uneven gelling of the mixture.
4. Pour into a squeeze bottle and apply to the piece.

## **MEASURING THE COLORES™ RESIN & THE HARDENER**

The basic formula is 2:1 by volume. That's 2 parts colored or clear resin to 1 part hardener. **Please Note:** This ratio remains unchanged whether you use a Colores™ hardener or the DurenameI™ hardener.

- Measure exactly 2 parts resin to 1 part hardener by volume.
- Put the resin in the cup first.
- Add the hardener.
- Do not exceed the recommended total amount of a 90-dram mixture (60 drams resin to 30 drams hardener).
- Do not mix less than the recommended minimum of a 15-dram mixture (10 drams resin to 5 drams hardener), known as the "10/5 mix."

**Please Note:** Most beginners start with the "10/5 mix" for best results.. A 20/10 mix is considered an average mix.

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## **MIXING THE COLORES™ RESIN & THE HARDENER**

- Mix the measured resin and hardener in a plastic cup. **Important:** Never use a wax or paper cup.
- Gently fold the mixture with a wooden stirrer. Fold well until the mix is thoroughly blended. Scrape the sides. Do not whip the mix; use a slow, even motion to fold the material together. One minute of mixing is ample. A correct mixing process is very important; otherwise you may experience bubbles or sticky pieces.
- If you are using an additive in your Colores™, mix it in after you mix the resin and hardener together. Gently squeeze the bottle of additive, carefully counting the drops. Keep a log of how much additive you use, in order to make reproducing similar mixtures possible in the future.
- Mix thoroughly.

For ultra smooth, bubble-free mixes, a vacuum pump is recommended. This is especially important when using transparent colors or when creating very fine lines.

Once the resin and hardener are combined, the mixture has a limited “pot life” or working time before it starts to set up (allow approximately 50 minutes).

## **APPLYING THE PREPARED COLORES™ MIXTURE**

Pour as soon as the resin and hardener are thoroughly mixed using one of the three methods described below:

1. By hand with a squeeze bottle.
2. With a pneumatic dispenser and syringe, sponge, toothpick or disposable paint brush.

### **1. The Squeeze Bottle Method**

- Carefully pour the epoxy mix into the bottle.
- Attach a needle cap.
- Select the needle for your application and attach it to the needle cap. In general, the finer the area, the finer the needle.
- Squeeze the desired amount of epoxy through the needle.
- Always outline the area first when applying Colores™ to your piece. Fill through the center in a back-and-forth motion until the piece is evenly covered. This motion is similar to crayon-style coloring. Do not overfill.
- Depending on the type of hardener used, other colors and/or special effects can be added at this time.

### **2. The Dispensing Unit and Syringe Method**

- Select the proper needle for the type of area you are filling.
- Attach the needle to the syringe. Twist together to lock the needle in place.
- Use a syringe stand or holding device (place the piece into a styrofoam board) to hold your needle and syringe. Carefully pour the epoxy into the syringe. Keep the upper 1/2" of the syringe clean and clear of epoxy.
- Squeeze the desired amount of epoxy through the needle. Always outline the area first when applying Colores™ to your piece. Fill through the center in a back-and-forth motion until the piece is evenly covered. This motion is similar to crayon-style coloring. Do not overfill.
- Depending on the type of hardener used, other colors and/or special effects can be added at this time.

**Please Note:** When using a dispensing unit, you can adjust the air pressure to increase or decrease the flow of Colores™.

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## **SETTING & CURING THE FILLED PIECE**

The process of hardening the epoxy resin is known as “curing.”

### **Colores™ Hardeners**

Air-drying the Colores™ epoxy resin is a heat-generating process, so no additional heat is required. Air-dry curing is complete in 72 hours. Heat can be applied for a quicker turnaround. Temperature should be no more than 150°F for two hours.

- Put the completed pieces in a dust-free area with level shelving. A closet-like room is ideal. For best results, the temperature should be no less than 72°F. Pieces will be dry to-the-touch in 24 hours, (or place at 95°F for 6–12 hours). A thermometer is helpful to control the temperature on a consistent basis.
- Perform this quick fingernail test to determine if the Colores™ is set: Dent the surface of the epoxy with your fingernail. If it makes a mark, the surface is not thoroughly cured. If no mark shows, then you have achieved a hard, high-gloss finish and your pieces are cured.

### **Durenamel™ Grinding Hardener**

**Important:** Durenamel™ grinding hardener **must be heat-cured** to produce the necessary hardness for grinding and polishing processes.

- Put the completed piece in a dust-free area with level shelving. A closet-like room is ideal. For best results, the temperature should be no less than 100°F and no more than 150°F. Pieces should be allowed to cure for 3–4 hours. Use a thermometer to help control the temperature on a consistent basis.
- Perform the fingernail test to determine if the piece is set: Dent the surface of the epoxy with your fingernail. If it makes a mark, the surface is not thoroughly cured. If no mark shows, then you have achieved a hard, high-gloss finish and your pieces are cured.
- When curing is complete, allow the piece to return naturally to room temperature.

## **FINISHING PIECES MADE WITH DURENAMESL™ GRINDING HARDENER**

- Remove the surplus cured Durenamel™ mixture using wet sandpaper, 800-grit or finer. Because the resin will not withstand elevated temperatures caused by a friction build-up, use a delicate touch.
- Keep water flowing throughout the grinding process to ensure that the piece remains cool.
- Once the desired resin level has been reached, create the desired luster using a polishing compound designed for use with plastics. Fabuluster polishing compound (available in your *Rio Grande Tools & Equipment* catalog) is a good choice for this step. Again, use care to polish gently and avoid heating the resin during the polishing process.

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## **EPOXY STORAGE**

Colored resins and hardeners can be stored in unopened containers for one full year. Store at room temperature, ideally between 65°F and 72°F. Once opened, resins and hardeners can be kept for up to one year, as long as containers are kept tightly sealed when not in use.

Hardeners will discolor over time and must be kept out of sunlight, ideally in a cool environment. Once resin and hardeners are mixed and have reached their pot life, the mix cannot be stored or reused; it must be thrown away. The mix will not cause any environmental damage if fully cured.

## **EPOXY CLEAN-UP**

- Clean the syringe by first removing the needle, then press the foot pedal to empty the colored resin. A plunger can then be used to further clean the syringe.
- Rinse the syringe clean with isopropyl alcohol or white vinegar.
- Clean squeeze bottles and needles with isopropyl alcohol or white vinegar.
- Use soap and water to clean hands and the work area when epoxy is still wet.
- Anyone handling Colores™ materials must maintain strict personal cleanliness and cleanliness in the work area.
- Suitable protective clothing, such as an apron or lab coat, should be worn to prevent contact. Never wear or use contaminated articles unless they are thoroughly cleaned.
- Contamination of the work area can be minimized by placing clean, disposable paper on tables or benches. Paper should be replaced twice daily or immediately following gross contamination. **Please Note:** Proper handling and removal of disposables is necessary. They can be a source of contamination to other workers.
- Contact with the material is reduced by using disposable utensils such as wooden tongue depressors and plastic cups.
- Isolate epoxy resin work areas from other work areas to limit direct exposure to untrained workers, contaminated tools and equipment.

## **SAFETY**

- Avoid skin contact. Epoxy resins are not acutely irritating to the skin, but they are capable of causing sensitization of the skin. Susceptibility to skin irritation and sensitization varies from person to person.
- Epoxy resins are considered to be milder skin sensitizers than amine-type curing agents or reactive diluents. Epoxy resins and formulations should not be allowed to come in contact with the skin. Use plastic gloves and/or suitable barrier creams.
- If contact occurs, wash the contaminated area immediately and thoroughly with soap and water or alcohol—never with a solvent! If repeated washings are necessary, use a lanolin-based skin cream after washing to restore natural skin oils.
- Keep a supply of paper towels on hand to wipe up spilled resin. These should not be reused.
- Care should be taken to avoid spreading Colores™ resin, epoxy or both throughout the work area. This will occur if workers handle foreign items such as doorknobs, desk drawers, spatulas, light fixtures, scales, etc. while wearing contaminated gloves.
- Provide adequate ventilation. Displaced-air ventilation should be provided. When resin mixes are worked hot, ventilation becomes mandatory. Use hoods to cover work benches, and exhaust the fumes through connecting air ducts.
- It may be expected that even if the foregoing procedures are scrupulously adhered to, a fraction of a percent of individuals will still develop allergenic reactions. If allergic, individuals must be prohibited from further contact.  
Some people develop an itchy skin rash not unlike a poison ivy rash. Medications are available to treat this. The rash will disappear, except in severe cases, within a few days without further treatment, provided contact is not resumed. In severe cases, medical workers have found water-based cortisone ointments to provide effective control.
- All of these liquid resins are low in acute oral toxicity.

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## **SAFETY (continued)**

- Eye contact should result in only slight, transient irritation. In the event of eye contact with the ingredients found in epoxy formulations, the eye should be flushed with water for approximately 15 minutes to assure complete removal of the chemical, and medical attention should be obtained immediately.
- Thoroughly cured epoxy resins are not skin irritants or sensitizing agents.
- Partially cured compounds, when breathed in or in contact with moist skin, may trouble sensitized individuals. For this reason, exercise caution when performing grinding and similar operations in order to minimize atmospheric contamination with dust. Molding powders and fluidized-bed coatings should also be handled with care.
- Epoxies are an organic compound. They are also non-toxic. If proper safety precautions are used along with good, clean maintenance, no problems should occur.

## **PROBLEM-SOLVING TIPS**

We are continually investigating and addressing problems in the field. To date, this is our library of problem-solving tips:

### **Bubbles (indicating problems in mixing, application or curing)**

- **Clusters of bubbles**

Bubble clusters indicate that the resin was too cold when mixed. Resin below 72°F is too cold for mixing. Ideally, resin should be warmed first to 85°F. Place the resin on a warming tray or in the “hot room.” Place a quantity of resin in a large cup or quart can to warm it. Once warmed, the resin will have a consistency which is more like a liquid and will be much easier to mix. This will also minimize any residual air entrapment.

- **Half-broken bubbles**

Half-broken bubbles indicate that the pieces cured too quickly or at too high a temperature. Sufficient time beforehand may not have been spent to reduce air bubbles (when mixing with warm resin or when using a vacuum pump). Working the surface back and forth during application can help reduce trapped bubbles. Check the temperature in your drying room, hot room or warming device. Check your mixing procedure.

- **Trapped bubbles under the surface**

Bubbles trapped under the surface usually indicate an incorrect mix. If the wrong hardener was chosen, the mixture may be too thick for the dimension of the piece or the size of the area being filled. Too many drops of additive may have been used. Too much epoxy may have been applied. A wavy, lumpy surface also indicates the mix was too thick for the type of surface being painted. Check your choice of hardener. Reevaluate your procedure.

### **Epoxy run-off**

Epoxy run-off indicates that too much epoxy was applied to the piece, the incorrect hardener was used (creating a mix that was too thin) or the epoxy mix was old and applied beyond its pot life. Check your procedure. Check your choice of hardener. Refer to the hardener chart.

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## **SPECIALTY EFFECTS** (Please Note: The following products are sold separately.)

### **Colores™ Finishing Powders**

Colores™ finish powders are absorbed by the wet surface of the Colores enamel before it is cured, leaving a striking, iridescent finish. Try mixing finish powder into your Colores color mixture for varied results; it won't affect cure time or results! Experiment to discover all the new effects you can create with these powders and document carefully so you can reproduce your favorite finishes. Colores offers two types of finishing powders:

- Duochrome powder
- Hilite powder

To apply finishing powders using the puff method:

1. Use a 2-oz. squeeze bottle (with a cap that will accept needle applicator tips) and a 21-gauge, 1/2" needle applicator tip.  
**Important:** Do not put the powder into the bottle, powder should be in an open container.
2. Assemble the bottle, cap and tip.
3. Squeeze the bottle to expel as much air as possible, then dip the needle tip into the container of powder.
4. Release pressure on the bottle, allowing the powder to be pulled into the bottle.
5. Tap the bottle lightly on a hard surface (such as your bench-top) to make the powder in the bottle airborne.
6. Puff the powder onto the surface of the wet Colores™ by squeezing the bottle repeatedly.  
The further from the piece the bottle is, the finer the powder spray will be.
7. Continue to puff the powder onto the piece until it is coated with powder.
8. Cure piece normally to achieve an iridescent appearance.

### **Colores™ Doming Resin**

Use versatile doming resin practically or artistically:

- practically, as a sealant to prevent oxidation of metal surfaces
- artistically, on charms and frame components to magnify objects or images below the domed surface—you can even tint the resin to create an antiqued sepia effect over photos! **Please Note:** Before applying doming resin over ink-jet printed images, test the permanence of the ink. These inks may need to be sealed before applying doming resin.

#### **Mixing & Applying the Doming Resin:**

1. Using a 1:1 ratio, pour resin into your mixing cup first at least one dram of ; then add one dram of the hardener.  
**Please Note:** It is imperative that you mix at least one dram each of resin and hardener to ensure a good chemical reaction.
2. Stir slowly, gently folding the mixture onto itself. Avoid creating air bubbles. When fully mixed, the mixture will turn clear.
3. Let it sit for 5–10 minutes to allow any air bubbles to rise to the top. Gently tap the sides of the cup to accelerate this process.
4. Using a squeeze bottle or a toothpick, drip the mixture into the cavity. Allow the product to spread out on its own.
5. Fill the bezel until the mixture comes up at the sides, creating the domed appearance. Though it looks like it will spill over the edges, it will not.

#### **Finishing the Filled Piece**

1. Heat the kiln (or toaster oven) to 150°F. (**Please Note:** If you use a toaster oven, dedicate it to this purpose **only**.)
2. Place the piece inside for 2–3 minutes.
3. Remove the piece and check to see if any bubbles have formed. If they have, use your toothpick to draw the bubbles out.
4. Once the bubbles have been removed, place the piece back in the oven or kiln and cure for two hours.
5. Check the bezel a few times before the product hardens to make sure that no bubbles form during the curing process.
6. When curing is complete, allow the piece to return naturally to room temperature.

Complete your piece as you desire with beads and/or findings.



**Buy with confidence from our  
complete line of Colores™  
kits and components**

**Colores™ Kits & Color Resin Sets**

Complete Colores™ kit	638-960
Basic components kit	638-964
Basic neutral color resin set	638-961
Bright opaque color resin set	638-962
Gemtone transparent color resin set	638-963
Pastel pearl color resin set	638-967
Earthtone pearl color resin set	638-968
Opal color resin set	638-973
Glitter color resin set	623-020
Classic color resin set	625-485

**Colores™ Components**

8 oz. thin hardener	638-975
8 oz. thick hardener	638-977
8 oz. Durenamel™ grinding hardener kit	625-484
8 oz. clear resin	638-976
8 oz. black resin	638-979
8 oz. white resin	638-978
8 oz. doming resin kit	623-014

**Colores™ Supplies**

3cc syringes, package of 20	638-972
Needle tip, 18-gauge (pink), package of 100	503-119
Needle tip, 20-gauge (yellow), package of 100	503-120
Needle tip, 22-gauge (gray), package of 100	503-118
Needle tip, 26-gauge (beige), package of 100	503-123
Replacement bottles, package of 50	638-991
Replacement caps, package of 50	638-990
Mixing cups, package of 50	638-992
Colores™ stained glass tape	638-989