Chapter Outline

Why Study Monomer Liquid and Polymer Powder Nail Enhancements?

Monomer Liquid and Polymer Powder Nail Enhancements

Monomer Liquid and Polymer Powder Nail Enhancement Supplies

Monomer Liquid and Polymer Powder Nail Enhancement Maintenance, Crack Repair, and Removal

Odorless Monomer Liquid and Polymer Powder Products

Colored Polymer Powder Products

Procedures
Learning Objectives

After completing this chapter, you will be able to:

- **LO1** Explain monomer liquid and polymer powder nail enhancement chemistry and how it works.
- **LO2** Describe the apex, stress area, and sidewall, and tell where each is located on the nail enhancement.
- **LO3** Demonstrate the proper procedures for applying one-color monomer liquid and polymer powder nail enhancements over tips and on natural nails.
- **LO4** Demonstrate the proper procedures for applying two-color monomer liquid and polymer powder nail enhancements using forms over nail tips and on natural nails.
- **LO5** Describe how to perform a one-color maintenance service on nail enhancements using monomer liquid and polymer powder.
- **LO6** Demonstrate how to perform crack repair procedures.
- **LO7** Implement the proper procedure for removing monomer liquid and polymer powder nail enhancements.

Key Terms

Page number indicates where in the chapter the term is used.

- apex (arch) pg. 905
- chain reaction (polymerization reaction) pg. 900
- initiators pg. 900
- monomer pg. 898
- monomer liquid pg. 898
- monomer liquid and polymer powder nail enhancements (sculptured nails) pg. 898
- nail extension underside pg. 905
- odorless monomer liquid and polymer powder products pg. 906
- polymer pg. 898
- polymerization (curing, hardening) pg. 899
- polymer powder pg. 898
- stress area pg. 905

Publisher's Note: Nail enhancements based on mixing together liquids and powders are commonly referred to as acrylic (a-KRYL-yk) nails. It might surprise you to discover the real definition of acrylic, since for many years this word has actually been used incorrectly by the nail enhancement industry. The term acrylic actually refers to an entire family of thousands of different substances, all of which share important, closely related features. Acrylics are used to make a wide range of products, including contact lenses, cements for mending broken bones, Plexiglas windows, and even makeup and other cosmetics. Surprisingly, all nail enhancement products are based almost entirely on ingredients that come from the acrylic family. For example, the ingredients in two-part monomer liquid and polymer powder enhancement systems belong to a branch of the acrylic family called methacrylates. In other words, acrylic is a very general term for a large group of ingredients. Monomer liquid and polymer powder nail enhancement products are based on methacrylates (METH-ah-cry-lahts). You can see some similarity in the spelling of the terms, which indicates that they are from the same chemical family or group. To be as accurate and specific as possible, this book refers to the two-part monomer liquid and polymer powder enhancement system as monomer liquid and polymer powder. However, please keep in mind that other industry literature, product marketing, and the like may continue to use the word acrylic.
Today’s monomer liquids and polymer powders come in many colors, including variations of basic pink, white, clear, and natural. These colors can be used alone or blended to create everything from customized shades of pink to match or enhance the color of your client's nail beds, to bold primaries or pastels that can be used to create a wide range of designs and patterns. With these powders, you can create unique colors or designs that can be locked permanently in the nail enhancement. They offer a wonderful way to customize your services or to express your artistry and creativity.

WHY STUDY MONOMER LIQUID AND POLYMER POWDER NAIL ENHANCEMENTS?
Cosmetologists should study and have a thorough understanding of monomer liquid and polymer powder nail enhancements because:

- Monomer liquid and polymer powder nail enhancements are popular services that will be frequently requested, and clients will expect expert service.
- Monomer liquid and polymer powder nail enhancements are lucrative services. Clients who desire them are committed to their upkeep, so if you earn clients’ trust and respect, you will build a loyal clientele.
- Knowing how to properly work with the enhancement material and understanding its chemical makeup will allow you to perform the service safely for you and for your client.

Monomer Liquid and Polymer Powder Nail Enhancements

Monomer liquid and polymer powder nail enhancements, also known as sculptured nails, are created by combining monomer (MON-oh-mehr) liquid, a chemical liquid mixed with polymer (POL-i-mehr) powder, a powder in white, clear, pink, and many other colors, to form the nail enhancement. Thus the reason for the terms liquid and powder is obvious.

Mono means one and mer stands for units, so a monomer is one unit called a molecule. Poly means many, so polymer means a substance formed by combining many small molecules (monomers) into very long chain-like structures. This is important to remember, since you will hear these terms many times throughout your career.

Monomer liquid and polymer powder products can be applied in three basic ways:

1. On the natural nail as a protective overlay
2. Over a nail tip

3. On a form to create a nail extension

**PROCEDURE 28-1 One-Color Monomer Liquid and Polymer Powder Nail Enhancements over Nail Tips or Natural Nails**

SEE PAGE 908

A natural hair and pointed, round, or oval application brush is the best brush to use for applying these products. The brush is immersed in the monomer liquid. The natural hair bristles absorb and hold the monomer liquid like a reservoir. The tip of the brush is then touched to the surface of the dry polymer powder, and as the monomer liquid absorbs the polymer powder, a small bead of product forms. This small bead is then carefully placed on the nail surface and molded into shape with the brush.

The monomer liquid portion is usually one of three versions of monomer liquid used in the beauty industry: ethyl methacrylate, methyl methacrylate, or odorless monomer liquid. All three often contain other monomers that are used as customizing additives. The industry standards are the ethyl methacrylate monomer liquid (EMA) and the odorless monomer liquid. Methyl methacrylate (MMA) is not recommended for use on nails and is not legal according to the state board rules in some states.

It may seem strange that polymer powder is also made mostly from ethyl methacrylate monomer liquid. The polymer powder is made using polymerization (POL-i-mehr-eh-za-shun), also known as curing or hardening, a chemical reaction that creates polymers. In this process, trillions of monomers are linked together to create long chains. These long chains create the tiny round beads of polymer powder used to create certain types of nail enhancements.

During the production of polymer powder, the powder forms into tiny round beads of slightly varying sizes. The beads are then poured through a series of special screens that sort the beads by size. The ones that are the right size are separated and then mixed with other special additives and colorants. The final mixture is packaged and sold as polymer powder. It is a surprisingly high-tech process that requires very specific manufacturing equipment, lots of quality control, and scientific know-how to do it right.

Special additives are blended into both the liquid and the powder. These additives ensure complete set or cure, maximum durability, color stability, and shelf life, among other attributes. It is these custom additives that make products work and behave differently. The polymer powders are usually blended with pigments and colorants to create a wide range of shades, including pinks, whites, and milky translucent shades, as well as reds, blues, greens, purples, yellows, oranges, browns, and even jet black.
When liquid is picked up by a brush and mixed with the powder, the bead that forms on the end of the brush quickly begins to harden. It is then put into place with other beads and shaped into place as they harden. In order for this process to begin, the monomers and polymers require special additives called catalysts (KAT-a-lists), substances that speed up chemical reactions between monomer liquid and polymer powder. Catalysts are added to the monomer liquid and used to control the set or curing time. In other words, when the monomer liquid and polymer powder are combined, the catalyst (in the liquid) helps control the set-up or hardening time. How? The catalyst energizes and activates the initiators.

The initiators start a chain reaction that leads to the creation of very long polymer chains. It is actually the initiators found in the powder that, when activated, will spring into action and start causing monomer molecules to permanently link together into long polymer chains. This is another example of the polymerization process discussed above, except this time it is actually occurring on the fingernail. The polymerization process begins when the liquid in the brush picks up powder from the container and forms a bead. Creating polymers can be thought of as a chain reaction, also known as polymerization reaction, a process that joins together monomers to create very long polymer chains, much like many dominos when set on their edges and lined up—tap the first domino, and it hits the next, and so on. This is how polymers form. Once the monomers join together to create a polymer, they do not detach from each other easily.

The initiator that is added to the polymer powder is called benzoyl peroxide (BPO). It is the same ingredient used in over-the-counter acne medicine, except that it has a different purpose in nail enhancement products. BPO is used to start the chain reaction that leads to curing (hardening) of the nail enhancement. There is much less BPO in nail powders than in acne treatments. Diverse nail enhancement products often use different amounts of BPO, since the polymer powders are designed to work specifically with a certain monomer liquid. Some monomer liquids require more BPO to properly cure than others. This is why it is very important to use the polymer powder that was designed for the monomer liquid that you are using. Using the wrong powder can create nail enhancements that are not properly cured and may lead to service breakdown or could increase the risk of your clients developing a skin irritation or sensitivity.

There are many monomer liquid and polymer powder systems available, and you might have to try several in order to find the product that fits best for you and your clients. To learn more about how products work and how to troubleshoot problems, see Nail Structure & Product Chemistry, Second Edition, by Douglas D. Schoon, published by Milady, a part of Cengage Learning.
Monomer Liquid and Polymer Powder Nail Enhancement Supplies

Just as every type of nail enhancement service requires specific tools, implements, equipment, and supplies, so do monomer liquid and polymer powder nail enhancements. Figure 28–1 shows examples of those products and supplies.

Monomer Liquid
The monomer liquid will be combined with polymer powder to form the sculptured nail. The amount of monomer liquid and polymer powder used to create a bead is called the mix ratio. A bead mix ratio can be best described as dry, medium, or wet. If equal amounts of liquid and powder are used to create the bead, it is called a dry bead. If twice as much liquid as powder is used to create the bead, it is called a wet bead. Halfway between these two is a medium bead, which contains one-and-a-half times more liquid than powder. In general, medium beads are the ideal mix ratio for working with monomer liquids and polymer powders.

The mix ratio typically ensures proper set and maximum durability of the nail enhancement. This mixture functions in a similar way as other, more familiar, mixtures. For example, if too much flour is added to cookie batter, the cookies will be dry and crumbly; if too little flour is added, the cookies will be soft and gooey. The same holds true for monomer liquids and polymer powders. If too much powder is picked up in the bead, the enhancement will cure incorrectly and may be brittle or discolored. If too little powder is used, the nail enhancement can become weak, and clients will be at greater risk of developing skin irritation and sensitivity.

Polymer Powder
Polymer powder is available in white, clear, natural, pink, and many other colors. The color(s) you choose will depend on the nail enhancement method you are using.

Nail Dehydrator
Nail dehydrators remove surface moisture and tiny amounts of oil left on the natural nail plate, both of which can block adhesion. Nail dehydrator should be applied liberally to the natural nail plate only; skin contact should be avoided. This step is a great way to help prevent lifting of the nail enhancement prior to applying primer.

Nail Primer
Many kinds of nail primers are available today. In the past, acid-based nail primer (methacrylic acid) was widely used to help adhere enhancements to the natural nail. Since acid-based nail primer is corrosive to the skin and potentially dangerous to eyes, acid-free and nonacid primers were developed.

Here’s a Tip
Monomer Liquid Bead Mix Ratio Guidelines

1 part monomer liquid + 1 part polymer powder = dry bead
1½ parts monomer liquid + 1 part polymer powder = medium bead
2 parts monomer liquid + 1 part polymer powder = wet bead
Acid-free and nonacid primers are the types of primers that are most often used today. They work as well as or better than acid-based nail primers, and have the added advantage of not being corrosive to skin or eyes. All nail primer products must be used with caution, and skin contact must be avoided. Read the manufacturer's instructions and refer to the Material Safety Data Sheet (MSDS) for safe handling recommendations and instructions. Acid-based nail primers must be used with caution and in accordance with the manufacturer's instructions.

For acid-based nail primers: Using a tiny applicator brush, insert the brush tip into the nail primer. Touch the brush tip to the edge of the bottle's neck to release the excess primer back into the bottle. Keeping the brush dry and using a light dotting action, carefully dab the brush tip to the center of the properly prepared natural nail. The acid-based primer will spread out and cover the nail plate. Do not use too much product—it will run onto the skin and cause burns or injury. Be sure to read the label for the manufacturer's suggested application procedures and precautions.

For nonacid and acid-free nail primers: Using the applicator brush, insert brush into the nail primer. Wipe excess product from the brush. Using a slightly damp brush, completely cover the nail plate with the primer. Do not use too much product—it will run onto the skin and cause skin irritation or sensitivity. The brush should hold enough product to treat two or three nails. Be sure the entire nail plate is covered. Before dipping the brush back into the container, gently wipe the brush on a clean table towel so you do not contaminate the bottle with any debris the brush may have picked up. Be sure to read the label for the manufacturer's suggested application procedures and precautions.

**Abrasives**

Select a medium grit (180 to 240) for natural nail preparation and initial shaping. Choose a medium grit for smoothing and a fine buffer (350 grit or higher) for final buffing. A three-way buffer is used to create a high shine on the enhancement when no polish is worn. If you avoid putting the product on too thickly, a 180 grit is usually enough to shape the nail enhancement. Avoid using coarser (lower-grit) abrasives or aggressive techniques on freshly applied enhancement products, because they can damage the freshly created nail enhancement.

**Nail Forms**

Nail forms are placed under the free edge and used to extend the nail enhancements beyond the fingertip for additional length. Nail forms are often made of paper or Mylar and coated with adhesive backs or are made of preshaped plastic or aluminum. Each of these forms is disposable, except the plastic and aluminum forms, which can be properly cleaned and disinfected.
Nail Tips
These are preformed nail extensions made from ABS or tenite acetate plastic and are available in a wide variety of shapes, styles, and colors, including natural, white, and clear.

Dappen Dish
The monomer liquid and polymer powder are each poured into a special holder called a dappen dish. These dishes must have narrow openings to minimize evaporation of the monomer liquid into the air. Do not use open-mouth jars or other containers with large openings. Those types of containers will dramatically increase evaporation of the liquid and can allow the product to be contaminated with dust and other debris. Dappen dishes must be covered with a tight-fitting lid when not in use.

Each time the brush is dipped into the dappen dish, the remaining monomer liquid is contaminated with small amounts of polymer powder. So never pour the unused portion of monomer liquid back into the original container. Empty the monomer liquid from your dappen dish after the service and wipe it clean with a disposable towel. To avoid skin irritation or sensitivity, do not contact skin with the monomer liquid during this process. Wipe the dish clean with acetone, if necessary, before storing in a dust-free location.

Nail brush
The best brush for use with these types of procedures is composed of sable hair and is usually an oval or round style application brush. Odorless monomer liquid requires less liquid, and a flat brush holds less liquid.

Synthetic and less expensive brushes do not pick up enough monomer liquid or do not release the liquid properly. Choose the brush shape and size with which you feel the most comfortable. Avoid overly large brushes (sizes 12 to 16), since they can hold excessive amounts of liquid and alter the mix ratio of the powder and liquid.

Having too much monomer liquid on your brush can increase the risk of accidentally touching the client’s skin and may increase the risk of developing skin irritation or sensitivities.

Safety Eyewear
Safety eyewear should be used to protect eyes from flying objects or accidental splashes. There are many types and styles. You can get more information by searching the Internet or contacting a local optometrist.
who can also help you with both nonprescription and prescription safety eyewear.

**Dust Masks**
Dust masks are designed to be worn over the nose and mouth to prevent inhalation of excessive amounts of dust. They provide no protection from vapors.

**Protective Gloves**
Both disposable and multiuse varieties of protective gloves can be purchased. Several types of materials are used to make these gloves. For many salon-related applications, gloves made of nitrile polymer powder work best.

**Storing and Disposing of Monomer Liquid and Polymer Powder Products**
Store monomer liquid and polymer powder products in covered containers. Store all primers and liquids separate from each other in a cool, dark area. Do not store products near heat.

After a service, you must discard used materials. Never save used monomer liquid that has been removed from the original container. Use each portion on one client only. To dispose of small amounts of leftover monomer liquid, carefully pour it into a very absorbent paper towel and then place it in a plastic bag. Avoid skin contact with the monomer liquid and never pour it directly into the plastic bag! Should skin contact occur, wash hands with liquid soap and water. After all used materials have been collected, seal them in a plastic bag and discard the bag in a closed waste receptacle. It is important to remove items soiled with enhancement products from your manicuring station after each client. This will help maintain the quality of the air in your salon. Dispose of these items according to local rules and regulations.

**Monomer Liquid and Polymer Powder Nail Enhancement Maintenance, Crack Repair, and Removal**
Regular maintenance helps prevent nail enhancements from lifting or cracking. If the nail enhancements are not regularly maintained, they have a greater tendency to lift, crack, or break, which increases the risk of the client developing an infection or having other problems.

When a cosmetologist has a client with a piece or section of the monomer liquid and polymer powder enhancement that has broken, lifted, or cracked, it is repaired by filing the area and adding monomer liquid and polymer powder to it. This is called a crack repair.

Proper maintenance must be performed every two to three weeks, depending on how fast the client’s nails grow.
If you choose to offer nail enhancement services to your clients, proper maintenance is a critical skill for you to learn. Do not let clients go too long without having a proper maintenance service, or you will have many more repairs to perform when they return. Proper maintenance is both safe and gentle to the nail unit and will not result in injury or damage. In the maintenance service, the nail is thinned down, the apex of the nail is removed, and the entire nail enhancement is reduced in thickness.

**Areas of Concern for Building Properly Structured Nail Enhancements**

Nail enhancements should not only look good, but they should also remain strong and healthy while your client is wearing them. Several areas of the nail must be considered when the nail enhancement is being built to accomplish this. Paying particular attention to the following areas of the nail enhancement will help you to create the look your clients’ desire and also provide them with the best and longest-lasting nail enhancements.

The **apex**, also known as **arch**, is the area of the nail that has all of the strength. Having strength in the apex allows the base of the nail, sidewalls, and tip to be thin, yet leaves the nail strong enough to resist frequent chipping or breaking. The apex is usually oval shaped and is located in the center of the nail. The high point is visible no matter where you view the nail.

The **stress area** is where the natural nail grows beyond the finger and becomes the free edge. This area needs strength to support the extension.

The **sidewall** is the area on the side of the nail plate that grows free of its attachment to the nail fold and where the extension leaves the natural nail.

The **nail extension underside** is the actual underside of the nail extension. The nail extension underside can jut straight out or may dip, depending on the nail style. The nail extension underside should be even, matched on each nail. Undersides should match in length from nail to nail on all fingers. The tip should fit the nail and finger properly, and the underside of the nail extension should be smooth, without any glitches.

The thickness of the nail enhancement should be rather thin if a client is to wear it comfortably while going about her day. The enhancement should graduate seamlessly from the cuticle to the end of the nail extension, so you do not feel an edge. The sidewalls and tip’s edge should be credit-card thin.
The C curve of the nail enhancement depends on the C curve of the natural nail. In the salon, a 35 percent C curve is the average. The top surface and bottom side should match perfectly.

To make sure the lengths of the nail extension and enhancements are appropriate and even, be sure to measure the length of the index, middle, and ring fingers; these should be the same length. The thumb and pinkie fingers should also be in proportion and match. LO2

**Monomer Liquid and Polymer Powder Nail Enhancement Removal**

There will be circumstances when your client feels that she wants to have her monomer liquid and polymer powder nail enhancements removed. Do not worry. The procedure is simple: You soak the enhancements off of the nail using acetone or the manufacturer’s suggested removal solution, remove the enhancement, and complete the service.

**Odorless Monomer Liquid and Polymer Powder Products**

Odorless monomer liquid and polymer powder products are nail enhancement products that have little odor. These products do not necessarily have the same chemistry as all other monomer liquid and polymer powder products. Rather than use ethyl acrylic these products rely on monomers that have little odor. Even though these products are called “odorless,” they do have a slight odor. Generally, if a monomer liquid does not produce a strong enough odor that others in the salon can detect its presence, it is considered to be an odorless product. Those that create a slight odor in the salon are called “low odor.”

In general, odorless products must be used with a dry mix ratio (equal parts liquid and powder in bead). If used too wet, there is the risk of the client developing skin irritation or sensitivity. This mix ratio creates a snowy-appearing bead on your brush. After it is placed on the nail, it will slowly form into a firm glossy bead that will hold its shape until pressed and smoothed with the nail brush. Wipe your brush frequently to avoid the product sticking to the hairs. Never rewet the brush with monomer liquid. This will change the mix ratio, which can lead to product discoloration, service breakdown, and increased risk of skin irritation and sensitivity.
Without re-wetting your brush, use the brush to shape and smooth the surface to perfection.

Odorless products harden more slowly and create a tacky layer called the inhibition layer. Once the enhancement has hardened, this layer can be removed with alcohol, acetone, or a manufacturer-recommended product. It is always best to use a plastic-backed cotton pad to avoid skin contact with the inhibition layer, since repeated contact with this layer can lead to skin irritation and sensitivity. The inhibition layer also can be filed away, but avoid skin contact with these freshly filed particles.

**Activity**

To determine whether you have done the best possible job to ensure a smooth, balanced, and symmetrical nail, and that all nails are consistent, try viewing them from the following perspectives.

**Top view.** Make sure all the perimeter shapes are consistent.

**Left side and right side views.** Look at the profile of each nail and make sure your apex is consistently located in the correct place and that the apexes match from nail to nail. Also look at the left side and right side of the nail and make sure the extension's underside matches.

**Down the center.** Look at the degrees of C curves. Do they match? Is the thinness/thickness of the product consistent and thick enough to withstand wear or are the nails too thin?

**From the client’s perspective.** Turn the client’s hand around and fold the fingers toward the palm of the hand so you can view the top surface from the client’s perspective. Sometimes you can see lumps and bumps from this view that you couldn’t see when looking at them during application.

**Line of light.** After the nail is smooth and polished, or after a UV gel sealant has been applied, you can follow the line of light that reflects off the surface of the nail to see whether the nail is really smooth. If the nail surface is not smooth, the line of light will not follow perfectly.

Colored Polymer Powder Products

Polymer powders are now available in a wide range of colors that mimic almost every shade available in nail polish. Nail artistry with colored polymer powder is limited only by your imagination. Some professionals use colors to go beyond the traditional pink and white French manicure combinations and offer custom-blended colors to their clients. They maintain recipe cards so that they can reproduce customized nail enhancements that clients cannot get from anyone else. As with all customized techniques, clients are willing to pay a few dollars more for the special service.
One-Color Monomer Liquid and Polymer Powder Nail Enhancements over Nail Tips or Natural Nails

Preparation

Pre-Service Procedure

1. Perform Procedure 25-1 See Page 817

Procedure

1. Use a pusher to gently push back the eponychium. Then, if needed, apply cuticle remover. Use as directed by the manufacturer, and carefully remove cuticle tissue from the nail plate. Have the client wash and dry their hands again to remove any oils from the cuticle remover.

2. Buff (gently) the nail plate with medium-fine abrasive (240 grit) to remove the shine caused by natural oil on the surface of the nail plate. Avoid over-filing of the nail plate. Remove the nail dust with a clean, dry nail brush, and do not touch the surface of the nails with your fingers as you may deposit oils from your fingertips, degrading the cleanliness of the nail.

3. Apply nail dehydrator to nails. Begin with the little finger on the left hand and work toward the thumb.

4. Apply tips, if your client wants them, as described in Chapter 27, Nail Tips and Wraps. (See Procedure 27–1, Nail Tip Application.) Cut tips to desired length.
5. Apply nail primer and follow the manufacturer’s directions. Allow nail primer to dry thoroughly. Acid-free primer will dry sticky and shiny. Never apply nail enhancement product over wet nail primer. This can cause product discoloration and service breakdown. Avoid overuse of nail primers. Apply primer to the natural nail, but avoid putting it on the nail tips unless instructed by the manufacturer of the nail primer.

6. Pour monomer liquid and polymer powder into separate dappen dishes.

7. Dip brush into the monomer liquid and wipe on the edge of the container to remove the excess.

8. Dip the tip of the same brush into the polymer powder and rotate slightly. Pick up a bead of product—with a medium-to-dry consistency, not runny or wet—that is large enough for shaping the entire free-edge extension. If you have trouble using a large bead to shape the edge properly, two smaller beads may be easier.

9. Place the pink product bead in the center of the free edge of the tip or natural nail. Immediately wipe your brush on the table towel gently to remove any product left in the bristles and bring brush back to a perfect point.

CAUTION

Check your nail primer daily for clarity, to ensure that it does not become contaminated with nail dust and other floating debris, which can dramatically reduce primer effectiveness. Never use nail primers that are visibly contaminated with floating debris. To avoid contamination, wipe the primer brush on a clean, dust-free towel before replacing the brush in the bottle.
One-Color Monomer Liquid and Polymer Powder Nail Enhancements over Nail Tips or Natural Nails continued

10 Use the middle portion of your sable brush to press and smooth the product to shape the enhancement’s free edge. Do not paint the product onto the nail. Pressing and smoothing produces a more natural-looking nail. Keep sidewall lines parallel, and avoid widening the tip beyond the natural width of the nail plate.

11 Place the second bead—of medium consistency—on the nail plate below the first bead and next to the free-edge line in the center of the nail. Immediately wipe your brush gently on the table towel to remove any product left in the bristles and to bring the brush back to a perfect point.

12 Press and smooth the product to sidewalls, making sure that the product is very thin around all edges. Leave a tiny free margin between the product placement and skin. Avoid placing the product too close to the skin, or the product may lift away from the nail plate and may also increase the chance of the client developing a skin irritation or sensitivity. Be sure to use a medium consistency mix that is not too wet.

13 Pick up smaller beads of pink polymer powder with your brush and place them at the base of the nail plate, leaving a tiny free margin between the product and the skin. Immediately wipe your brush on the table towel gently to remove any product left in the bristles and to bring the brush back to a perfect point.

14 Use the brush to press and smooth beads over the entire nail plate. Glide the brush over the nail to smooth out imperfections.
Apply more product near eponychium, sidewall, and free edge if needed to complete the application. Be sure that the product in these areas remains thin for a natural-looking nail.

Use medium abrasive (180 to 240 grit) to shape the free edge and to remove imperfections. Then refine with medium-fine abrasive (240 grit).

Buff the nail enhancement with fine-grit buffer (350 grit or higher) until the entire surface is smooth. If nail polish is to be worn, use a high-shine buffer.

Apply and rub nail oil into the surrounding skin and nail enhancement, massaging briefly to speed penetration.

Apply hand cream and massage the hand and arm.

Ask the client to wash her hands with soap and water at the hand washing station or ask her to use the nail brush to clean her nails over a finger bowl. Rinse with clean water to remove soap residue that may cause lifting. Dry thoroughly with a clean disposable towel.

Polish nail enhancements or apply a gel sealant.

Finished look.

**Post-Service**

- Complete **Post-Service** Procedure

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Part 5: Nail Care  Chapter 28  Monomer Liquid & Polymer Powder Nail Enhancements  911

LO3
Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms

**Preparation**

- Perform 25-1 Pre-Service Procedure SEE PAGE 817

**Procedure**

1. Clean the nails and remove existing polish or gel sealant.
2. Push back the eponychium and remove the cuticle from the nail plate.
3. Remove oily shine from the natural nail surface with a medium-fine abrasive.
4. Apply nail dehydrator.

5. Position the nail forms. If you are using disposable forms, peel a nail form from its paper backing and, using the thumb and index finger of each of your hands, bend the form into an arch to fit the client’s natural nail shape. Slide the form into place and press adhesive backing to the sides of the finger. Check to see that the form is snug under the free edge and level with the natural nail. If you are using multiuse forms, slide the form into place, making sure the free edge is over the form and that it fits snugly. Be careful not to cut into the hyponychium under the free edge. Tighten the form around the finger by squeezing lightly.
Apply nail primer by touching the brush tip to the edge of the bottle’s neck to release the excess primer back into the bottle. Using a light dotting action, dab the brush tip to the prepared natural nail only. One end of the primer molecule chemically bonds to the nail protein; the other end of the molecule is a methacrylate, so it can bond to the monomer liquid as it cures. Always follow the manufacturer’s directions. Allow the nail primer to dry thoroughly. Acid-free primer will dry to a shiny, sticky surface. Never apply nail enhancement product over wet nail primer, since this can cause product discoloration and service breakdown. Avoid overuse of nail primers.

Pour monomer liquid and polymer powder into separate dappen dishes. With the two-color method you will need three dappen dishes—one for the white tip powder; one for the clear, natural, or pink powder; and one for the monomer liquid. You can work out of the monomer liquid and polymer powder containers, as well.

Saturate your application brush with monomer liquid and wipe out the liquid completely. Dip the brush in the monomer liquid and wipe on the edge of the container to remove the excess so you can get the liquid you need to pick up the powder.

Dip the tip of the same brush into the white polymer powder and pick up a bead of product—it should have a dry-to-medium consistency, not runny or wet—that is large enough to cover the entire free-edge extension up to the edge of the smile line. If this is too large a bead to shape properly, using two smaller beads may be easier.

Place the white bead in the center of the nail form at the point where the free edge joins the nail form. Wipe your brush gently on a clean or disposable towel—to remove any remaining product, and allow your bead to start to self-level and begin setting up. Working with a freshly applied bead of monomer liquid and polymer powder will be sticky; allowing it to set up a bit, will give you a less sticky surface to work with. After the product has set up but still moves, use the tip of your application brush to wipe the smile line so it is crisp.
Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms

11 Shape the free edge.

12 Pick up a second bead of white powder, again with a medium consistency, and place it on the natural nail above the last bead, inside the free-edge smile line and in the center of the nail. Wipe your brush gently on a clean or disposable towel—do not use the table towel—to remove any remaining product, and allow your bead to start to self-level and begin setting up.

13 Shape the second bead of white powder.

14 Pick up a small bead of pink polymer powder with your brush and place it at the cuticle area of the nail plate, leaving a tiny free margin between it and the skin. Use the brush to press and smooth these beads over the entire nail plate. Glide the brush over the nail to smooth out imperfections. Enhancement product application near eponychium, sidewall, and free edge must be thin for a natural-looking nail.

15 Repeat steps 5 through 14 on remaining nails.

16 When nail enhancements are thoroughly hardened, loosen forms and slide them off. Nail enhancements will harden enough to file and shape after several minutes; they should make a clicking sound when lightly tapped with a brush handle.

17 Use medium abrasive (180 to 240 grit) to shape the nail and remove imperfections. Begin by shaping the tip’s edge on all nails. Be sure to measure the lengths so they are consistent.
26 File the left side and right side of each nail.

19 File the underside of nail extensions on both sides of each nail.

20 Glide the abrasive over the nail with long sweeping strokes to further shape and perfect the enhancement surface. Thin the product near the base of all nail plates, free edges, and sidewalls.

21 Buff the nail enhancements.

22 Apply nail oil.

23 Apply hand cream and massage the hand and arm.

24 Clean the nail enhancements.

25 Polish the nail with a clear gloss polish or apply a gel sealant.

26 Finished look.

Post-Service

One of the most common mistakes is applying product too thickly, especially near the base of the nail plate. Avoid this and you will save money and time.

Service Tip

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One-Color Monomer Liquid and Polymer Powder Maintenance

 Implements and Materials

In addition to the basic materials on your manicuring table, you will need the following supplies for the One-Color Monomer Liquid and Polymer Powder Maintenance procedure:

• Application brushes
• Dappen dishes
• Monomer liquid
• Nail dehydrator
• Nail primer
• Polymer powder

Preparation

See page 817

Pre-Service Procedure

1. Remove the existing polish or gel sealant.

2. Using a medium-coarse abrasive (120 to 180 grit), carefully smooth down the ledge of the existing product until it is flush with the new growth of nail plate. Do not dig into or damage the natural nail plate with your abrasive.

3. Hold the medium abrasive (180 to 240 grit) flat and glide it over the entire nail enhancement to reshape, refine, and thin out the free edge until the white tip appears translucent. Take care not to damage the client’s skin with the abrasive.
4. Use a fine-grit buffer (350 grit or higher) to buff the product, and smoothly blend it into new growth area without damaging the natural nail plate.

5. Use a medium-abrasive (180 to 240 grit) file to smooth out any areas of product that may be lifting or forming pockets. Do not file into the natural nail plate.

6. Clean the nail enhancements.

7. Remove the oily shine from the natural nail surface.

8. Apply nail dehydrator.

9. Apply nail primer and follow manufacturer’s directions. Allow primer to dry thoroughly. Avoid applying nail enhancement product over wet primer, since this can cause product discoloration and service breakdown. Avoid overusing nail primer.

10. Prepare monomer liquid and polymer powder.

11. Pick up one or more small beads of enhancement product and place at the natural nail area, the regrowth.

12. Use the brush to smooth these beads over the new growth area. Glide the brush over the nail to smooth out imperfections. Enhancement product application near the eponychium, sidewall areas, and free edge must be extremely thin for a natural-looking nail. Be sure to leave a tiny free margin between the nail enhancement product and skin for more small beads of powder and place them at the center of the nail plate.

13. Pick up one or more small beads of enhancement product and place them at the center or apex of the nail.

**CAUTION**

Do not use a nipper to clip away loose nail enhancement product. Nipping may perpetuate the lifting problem and can damage the nail plate. If lifting is excessive, soak off the enhancement and start fresh with a new nail application.
One-Color Monomer Liquid and Polymer Powder Maintenance continued

14 Use the brush to smooth these beads over the entire nail enhancement. Glide the brush over the nail to smooth out imperfections. Enhancement product application near the eponychium, sidewall areas, and free edge must be extremely thin for a natural-looking nail. Be sure to leave a tiny free margin between the nail enhancement product and skin for more small beads of powder and place them at the center of the nail plate.

15 Allow the nails to harden. Nails are hard when they make a clicking sound when lightly tapped with a brush handle. Once hardened, shape the nail enhancements with an abrasive board.

16 Buff the nail enhancement.

17 Apply nail oil.

18 Apply hand cream and massage the hand and arm.

19 Clean the nail enhancements.

20 Apply nail polish or gel sealant.

21 Finished look.

Service Tip

After you have applied the dehydrator and the nail is dry, do not touch the nail plates again with your fingers or allow the client to rest their hands against their face. Touching the prepped nail plate—or getting makeup or moisturizer on it—can deposit oils and cause possible lifting.

Post-Service

• Complete Procedure 25-2 Post-Service Procedure

See Page 821

Los
Crack Repair for Monomer Liquid and Polymer Powder Nail Enhancements

Preparation

- Perform Procedure 25-1

Procedure

1. Remove the existing polish or nail sealant.

2. File a V shape into the crack or file flush to remove the crack. File more than just the crack for extra protection.

3. Apply nail dehydrator to any exposed natural nail in the crack.

4. Apply nail primer to any exposed natural nail in the crack.

Implements and Materials

In addition to the basic materials on your manicuring table, you will need the following supplies for the Crack Repair for Monomer Liquid and Polymer Powder Nail Enhancements procedure:

• Application brushes
• Dappen dishes
• Monomer liquid
• Nail dehydrator
• Nail forms
• Nail primer
• Polymer powder

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If the crack needs support, apply a nail form.

Prepare monomer liquid and polymer powder.

Pick up one or more small beads of product, and apply them to the cracked area. If you are using the two-color system, be sure to use the correct color of polymer powder.

Press and smooth the enhancement product to fill the crack. Be careful not to let the product seep under the form.

Apply additional beads, if needed, to fill in the crack or reinforce the rest of the nail. Shape the enhancement and allow it to harden.

Remove the form, if used.

Reshape the nail enhancement using a medium abrasive (180 to 240 grit).

Use a fine abrasive (350 grit or higher) to buff and smooth the nail. Use a high-shine buffer, if desired.

Apply nail oil.

Apply hand cream and massage the hand and arm.

Clean the nail enhancements.

Apply nail polish or gel sealant.

Repairs nail.

Post-Service

• Complete Procedure Post-Service
Monomer Liquid and Polymer Powder Nail Enhancement Removal

Preparation

- Perform Procedure 25-1 Pre-Service Procedure

Pre-Service Procedure

Procedure

1. Fill the glass bowl with enough acetone or product remover to cover \( \frac{1}{2} \) inch higher than client’s enhancements. Place the bowl inside another bowl of hot water to heat the acetone safely and speed up the removal procedure.

2. Soak the client’s nail enhancements for twenty to thirty minutes, or as long as needed to remove the enhancement product. Refer to the manufacturer’s directions and precautions for nail enhancement product removal.
PROCEDURE 28–5
Monomer Liquid and Polymer Powder
Nail Enhancement Removal continued

3 Once or twice during the procedure, use a wooden or metal pusher
to gently push off the softened enhancement. Repeat until all enhancements
have been removed. Do not pry them off with nippers, as this will damage the
natural nail plate. Avoid removing enhancements from the acetone or product
remover, or they will quickly reharden, making them more difficult to remove.
The key is to leave the nails in the acetone until they fall off and leave the
natural nail free of product. Use a plastic-backed cotton pad to remove the
remaining product.

4 Condition the skin and nails.

5 Lightly buff the nails to smooth any remaining ridges
or residue.

6 Recommend that the client receive a basic manicure.

Nail plates may appear
to be thinner after enhancements have been
removed. This is generally
because there is more
moisture in the natural
nail plate, which makes
them more flexible. It is
not an indication that the nail
plates have been weakened
by the nail enhancement. This
excess flexibility will be lost as
the natural nails lose moisture
over the next twenty-four hours,
and the nail plates will appear
to be thicker and more rigid.

7 Finished look.

Post-Service

• Complete

PROEDURE 25–2 Post-Service

Procedure

SEE PAGE 821

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Review Questions

1. What is the chemistry behind monomer liquid and polymer powder nail enhancements and how does it work?
2. What are the definitions of apex, stress area, and sidewall, and where is their location on the nail enhancement?
3. What is the proper procedure for applying one-color monomer liquid and polymer powder nail enhancements over tips and on natural nails?
4. What is the proper procedure for applying two-color monomer liquid and polymer powder nail enhancements using forms?
5. What is the proper procedure for performing a one-color maintenance service on nail enhancements using monomer liquid and polymer powder?
6. How is a crack repair performed?
7. How are monomer liquid and polymer powder removed from the nail?

Chapter Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>apex</td>
<td>Also known as arch; the area of the nail that has all of the strength.</td>
</tr>
<tr>
<td>chain reaction</td>
<td>Also known as polymerization reaction; process that joins together monomers to create very long polymer chains.</td>
</tr>
<tr>
<td>initiators</td>
<td>Substance that starts the chain reaction that leads to the creation of very long polymer chains.</td>
</tr>
<tr>
<td>monomer</td>
<td>One unit called a molecule.</td>
</tr>
<tr>
<td>monomer liquid</td>
<td>Chemical liquid mixed with polymer powder to form the sculptured nail enhancement.</td>
</tr>
<tr>
<td>monomer liquid and polymer powder nail enhancements</td>
<td>Enhancements created by combining monomer liquid and polymer powder.</td>
</tr>
<tr>
<td>nail extension underside</td>
<td>The actual underside of the nail extension.</td>
</tr>
<tr>
<td>odorless monomer liquid and polymer powder products</td>
<td>Nail enhancement products that have little odor.</td>
</tr>
<tr>
<td>polymer</td>
<td>Substance formed by combining many small molecules (monomers) into very long chain-like structures.</td>
</tr>
<tr>
<td>polymerization</td>
<td>Also known as curing or hardening; chemical reaction that creates polymers.</td>
</tr>
<tr>
<td>polymer powder</td>
<td>Powder in white, clear, pink, and many other colors that is combined with monomer liquid to form the nail enhancement.</td>
</tr>
<tr>
<td>stress area</td>
<td>Where the natural nail grows beyond the finger and becomes the free edge.</td>
</tr>
</tbody>
</table>