

# Monomer Liquid and Polymer Powder Nail Enhancements

# 17

## Chapter Outline

- Why Study Monomer Liquid and Polymer Powder Nail Enhancements?
- Monomer Liquid and Polymer Powder Nail Enhancement Chemistry
- Monomer Liquid and Polymer Powder Nail Enhancement Supplies
- Monomer Liquid and Polymer Powder Nail Enhancement Maintenance and Crack Repair
- 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, sidewall, and where they are 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.

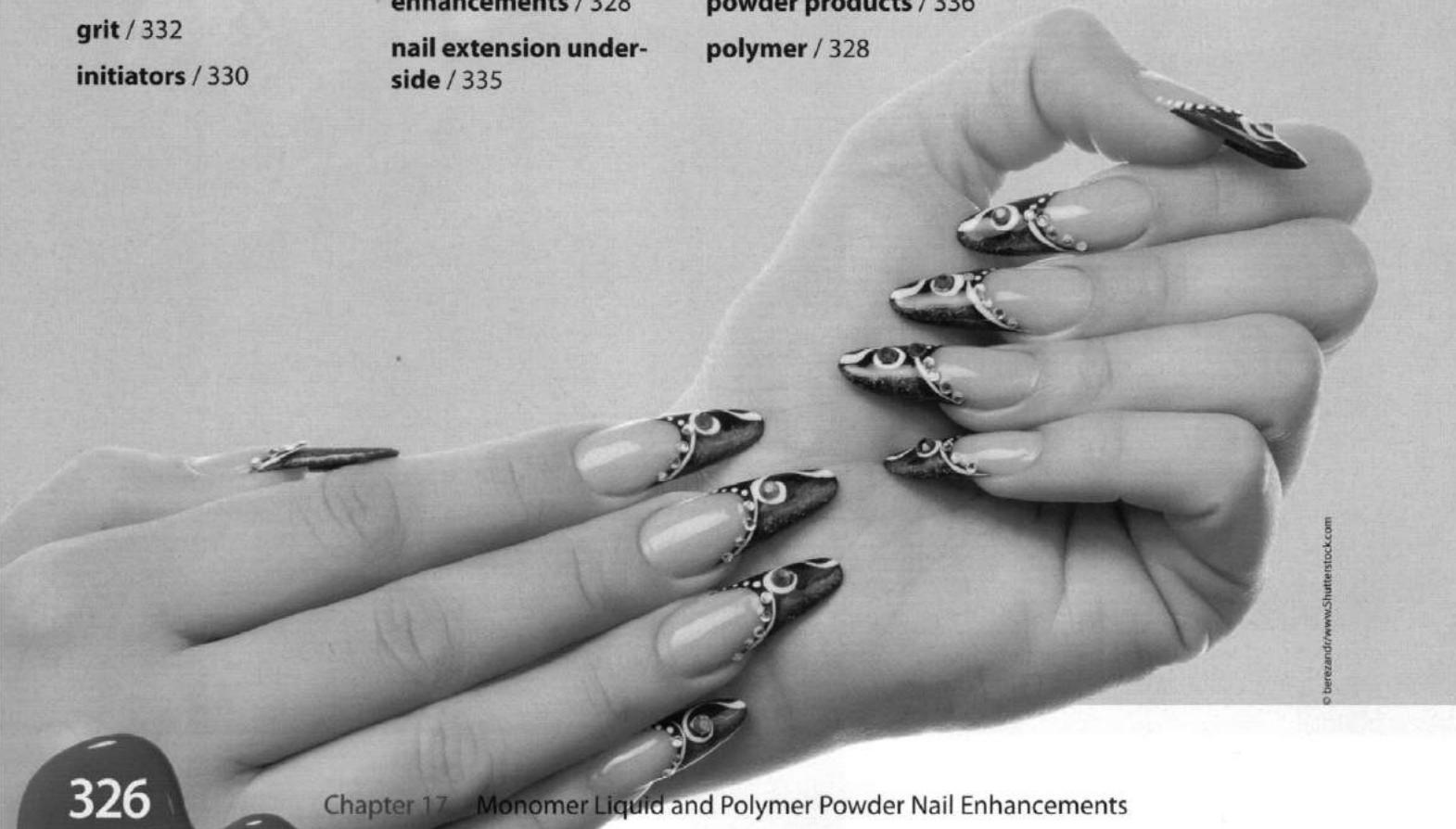
## ✓ LO7

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.

<b>abrasives</b> / 332	<b>mix ratio</b> / 330	<b>nail forms</b> / 332	<b>polymer powder</b> / 328
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**n**ail 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 things, 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" (METH-ah-cry-latz). In other words, "acrylic" is a very general term for a large group of ingredients. To be as accurate and specific as possible, you will find that the two-part monomer liquid and polymer powder enhancement system in this book is referred to as monomer liquid and polymer powder; however, please also 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. Monomer liquid and polymer powder nail enhancements can be created with a single color powder, if the client wears nail polish all the time. Or they can be created by using a pink or natural-colored powder over the nail bed and a natural or soft white powder to replicate a natural nail free edge. A stark white powder can be used to create the French manicure look. The finished nail enhancement can be polished with nail polish or buffed to a high-glossy shine for a more natural look. These types of services are extremely versatile and highly durable, which partially explains their great popularity.

# WHY STUDY MONOMER LIQUID AND POLYMER POWDER NAIL ENHANCEMENTS?

Nail technicians should have a thorough understanding of monomer liquid and polymer 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 materials and understanding their chemical makeup will allow you to perform the service safely for you and for your client as well as give you the creative edge over your competition.

## ■ MONOMER LIQUID AND POLYMER POWDER NAIL ENHANCEMENT CHEMISTRY

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

*Mono* means *one* and *mer* stands for *units*, so a **monomer** is one unit, or one *molecule*. *Poly* means *many*, so **polymer** means *many units* or many molecules linked together in a chain. 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.
4. To create small works of art on top or inside a nail enhancement.

A natural hair brush is best for applying these enhancement 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 nail industry: ethyl methacrylate, methyl methacrylate, or odorless monomer liquid. All three often contain other monomers that are used as customizing additives. The industry standard is the ethyl methacrylate monomer liquid (EMA) and 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. Here are four main reasons why MMA should *not* be used:

1. MMA nail products do not adhere well to the nail plate. To make these products adhere, nail technicians often shred (etch) the surface of the nail. This thins the nail plate and makes it weaker.
2. MMA creates the hardest and most rigid nail enhancements, which makes them very difficult to break. When jammed or caught, the overly filed and thinned natural nail plate will often break before the MMA enhancement, leading to serious nail damage.
3. MMA is extremely difficult to remove. Since it will not dissolve well in product removers, it is usually pried from the nail plate, creating still more damage.
4. *The FDA says not to use it!* This is clearly the most important reason. The FDA bases its prohibition on the large number of consumer complaints resulting from the use of MMA nail enhancements in the late 70s and continues to maintain this position today.

For these reasons, the Nail Manufacturers Council and the American Beauty Association have also taken a stance against the use of MMA liquid monomer as an ingredient in artificial nail liquids—not because MMA is toxic, but because it is an unsuitable ingredient. MMA is a widely used monomer with a long history of safe use in medical and dental products. It is fine for making bulletproof windows and shatterproof eyeglasses. However, artificial nails should be beautiful, and they should not damage the natural nail.

It may seem strange that polymer powder is also made mostly from ethyl methacrylate monomer liquid. The polymer powder is made using a special chemical reaction called **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 tiny round beads of polymer powder of slightly varying sizes. These are 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 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), additives designed to speed up chemical reactions. 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** found in polymer powder, when activated by a catalyst, will spring into action and cause monomer molecules to permanently link together into long polymer chains. This action is referred to as the polymerization process. Polymerization begins at the time 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 a polymerization reaction, a process that joins together monomers to create very long polymer chains. Think of this as many dominos set on their edges and lined up—when you tap the first domino, 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. **LO1**

## ■ 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. Here is a list of those requirements (**Figure 17-1**). In addition to the supplies in your basic manicuring setup, you will need:

### Monomer Liquid

The monomer liquid will be combined with polymer powder to form the nail enhancement. 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 more liquid than powder. In general, medium beads are the ideal mix ratio for working with monomer liquids and polymer powders.



▲ **Figure 17-1** Supplies needed for monomer liquid and polymer powder nail enhancement applications.

The mix ratio typically ensures proper set and maximum durability of the nail enhancement. For example, if too much flour is added when making cookies, the cookies will be dry and crumbly; too little flour will make the cookies 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 lead to brittleness and/or discoloration. If too little powder is used, the nail enhancement can become weak, and the risk of clients developing skin irritation and sensitivity may increase.

## 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.

Related Information:

## 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. After the dehydrator has dried, do not touch the nail plate before applying primer.

## Nail Primer

**Nail primer** is used on the natural nail prior to product application to assist in adhesion. The primer is used to chemically bond the enhancement product to the natural nail. One end of the primer molecule chemically bonds to the nail protein in the natural nail; the other end of the molecule is a methacrylate, so it bonds to the monomer liquid as it cures.

There are basically two kinds of nail primers for preparing the natural nail for a monomer liquid and polymer powder nail enhancement, acid-based and nonacid (acid-free) primers. Acid-based nail primer (methacrylic acid) was once widely used to help adhere enhancements to the natural nail. Since this type of nail primer is corrosive to the skin and potentially dangerous to the eyes, *acid-free* and *nonacid* primers were developed. These acid-free and nonacid alternatives work as well as or better than acid-based nail primers and have the added advantage of not being corrosive to the skin or eyes. Even so, all nail primer products must be used with caution, and strictly in accordance with the manufacturer's instructions. Skin contact must be avoided during application, and the SDS sheet should be referenced for safe handling recommendations and specific instructions when using these products.

To apply acid-based and acid-free nail primers: insert the applicator brush into the nail primer. Wipe off excess 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 prepare two or three nails. Before dipping the brush back into the container, gently wipe the brush on a clean disposable table towel so you do not contaminate the bottle with any debris the brush may have picked up.



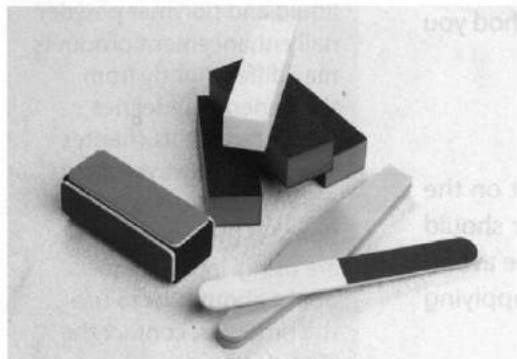
The manufacturer's instructions for using monomer liquid and polymer powder nail enhancement products may differ slightly from the general guidelines presented in this chapter. You should always follow the manufacturer's instructions for the products you are using. If you are in doubt about how to use the products, contact the manufacturer.

### CAUTION:

Acid-based nail primers are very effective but can cause serious—and sometimes irreversible—damage to the skin and eyes. Never use acid-based nail primer or any other corrosive material without wearing protective gloves and safety eyewear.

### 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. Dispose of nail primers that are visibly contaminated with floating debris.



▲ Figure 17-2 Assortment of various buffers and abrasives.

Never apply nail enhancement product over wet nail primer. This can cause product discoloration and service breakdown. Only apply primer to the natural nail. Avoid putting nail primer on plastic nail tips.

Be sure to read the label for the manufacturer's suggested application procedures and precautions.

## Abrasives

The term **abrasives** is used to describe nail files and buffers. Although some abrasives have fancy names, they all have a **grit** number. Grit refers to how many grains of sand are on the file per square inch. For example, if there were 100 grits of sand per square inch, then the particles would be spread apart, creating a rough surface. If there were 240, the sand particles would be closer together, creating a smoother surface. So you now understand that the lower the number, the rougher the abrasive will be. The higher the number, the softer it will be. Be aware that the different abrasive core materials will also change how an abrasive works. Plastic and wood cores are used for files and plastic, and sponge cores are used in buffers. The wood will make the abrasive more aggressive, whereas the sponge core will form around the nail and therefore be gentle.

Here is a list of the most common abrasives used for filing, shaping, and buffering nail enhancements (**Figure 17-2**):

- A course-grit file (100 grit or lower) is strong enough to thin enhancement product to prepare the enhancement for a refill or rebalance. Avoid using coarser, lower-grit abrasives or aggressive techniques on freshly applied enhancement products, as they can damage the soft, freshly created nail enhancement.
- A medium-grit file (150 to 180 grit) is used for initial shaping of the perimeter of the nail, refining the overall surface shape of a nail enhancement, or for smoothing the surface before buffering. If you avoid putting the product on too thick, a 180 grit is usually strong enough to shape the entire nail enhancement.
- A fine-grit file or buffer (240 grit or higher) is used for finish filing, refining, and buffering. This grit of file is also used to shape the free edge of a natural nail.
- A **shiner** is a buffer (usually 400/1000/4000) used to create a high shine on a natural nail or a nail enhancement when no polish will be worn. This buffer usually has three sides; you must buff the entire nail with the lowest grit side first and then repeat with the other sides to create a glossy shine to the nail. Shiner buffers can also have two sides. In this case, you may want to buff the entire surface of the nail with a 240- or 350-grit buffer prior to buffering with the shiner.

## Nail Forms

**Nail forms** are placed under the free edge of the natural nail and used as a guide to extend the nail enhancement beyond the fingertip for additional length. Disposable nail forms often are made of paper or Mylar and coated with

adhesive backs. Reusable nail forms are made of preshaped plastic or aluminum and can be cleaned and disinfected between clients.

## Nail Tips

**Nail tips** are preformed nail extensions made from acrylonitrile butadiene styrene (ABS), or tenite acetate plastic. They are available in a wide variety of shapes, styles, and colors, such as natural, white, and clear. Nail tips are adhered to the tip of the natural nail with a fast set resin to extend the length. They are not strong enough to wear on their own, so they must be overlaid with an enhancement product.

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## Dappen Dish

The monomer liquid and polymer powder are each poured into a special container called a **dappen dish**. These dishes must have narrow openings to minimize the 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. A dappen dish must be covered with a tightly 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

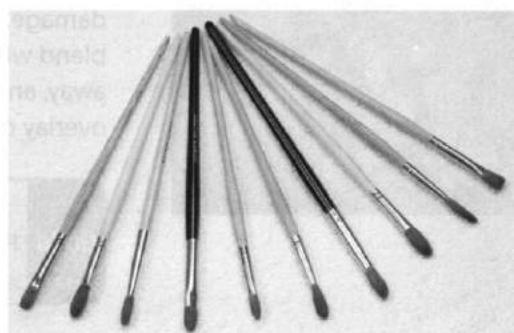
The best nail brush to use with monomer liquid and polymer powder enhancement products is composed of natural kolinsky, sable, or a blend of both. The brushes are either oval, round, or square and come in a variety of sizes. The most commonly used brush for monomer liquid or polymer powder is a #8 oval brush. (**Figure 17-3**).

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 (size 12 to 16), since they can hold excessive amounts of liquid and alter the mix ratio of the powder and liquid. Their large size also allows the brush to touch the skin during application, which can overexpose your client to the monomer.

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. An odorless monomer liquid requires less liquid, so using a flat brush that holds less liquid is recommended.

### Here's a Tip:

Avoid wiping your brush too rapidly or hard against a table towel. This can press hairs against the sharp edge of the metal ferrule that holds the hairs in place and cut them off.



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▲ **Figure 17-3** Various sizes of kolinsky, sable, and blended brushes used for applying monomer liquid and polymer powder nail enhancements.

## Storing and Disposing of Monomer Liquid and Polymer Powder Products

Store monomer liquid and polymer powder products in a covered container. 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 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 or spa. Dispose of these items according to local rules and regulations.

## ■ MONOMER LIQUID AND POLYMER POWDER NAIL ENHANCEMENT MAINTENANCE AND CRACK REPAIR

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 nail technician 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 2 to 3 weeks, depending on how fast the client's nails grow. Properly maintaining nails is a critical skill for you to learn, if you choose to offer nail enhancement services to your clients. 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 enhancement is thinned down to blend with the new growth area of the natural nail. The apex of the nail is filed away, and the entire nail enhancement is reduced in thickness to prepare for an overlay of new product.

Go to Procedure 17-1 One-Color Monomer Liquid and Polymer Powder Nail Enhancements Over Nail Tips or Natural Nails page 338

Go to Procedure 17-2 Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms page 341



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## 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 made 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 the **arch**, is the area of the nail with the most 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 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 (**Figure 17-4**).



**▲ Figure 17-5** The sidewall runs straight from the cuticle down the side or wall of the nail to the end of the extension.

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.

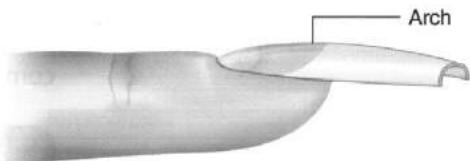
The **sidewall** is the area on the side of the nail plate that grows free of its natural attachment to the nail fold and where the extension leaves the natural nail. (**Figure 17-5**).

The **nail extension underside** is the actual underside of the nail extension (**Figure 17-6**). The nail extension underside can jut straight out or may dip depending on the nail style. Undersides should be even and 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.

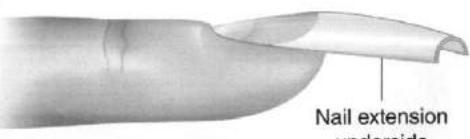
The thickness of the nail enhancement should be rather thin if a client is to wear it comfortably while going about her day (**Figure 17-7**). The enhancement should graduate seamlessly from the cuticle area to end of the nail extension so you do not feel an edge. The sidewalls and tip's edge should be credit-card thin.

The C-curve of the nail enhancement depends on the C-curve of the natural nail. In the salon or spa, a 35 percent C-curve is the average. The top surface and bottom side should match perfectly. The C-curve will provide structure to the nail so that it appears slender on the hand. More importantly, the C-curve provides strength, like the curve in a bridge or an egg.

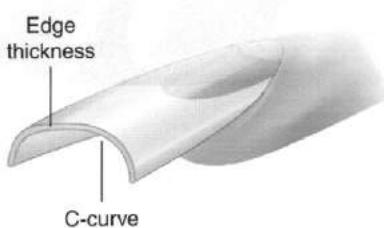
To make sure the lengths of the nail extension and enhancements are appropriate and even, be sure to measure the length of the index, middle, and ring fingers; these should be the same length. The thumb and pinkie fingers should also be in proportion and match. **LO2**



**▲ Figure 17-4** The arch is the highest point in the nail and should be located in the same place on every finger.



**▲ Figure 17-6** The nail extension underside will come straight out or drop down a bit depending on the client's natural nail and the look she prefers.



**▲ Figure 17-7** The thickness of the edge should be credit-card thin, and there should be a consistent C-curve in the nail for strength.

## Monomer Liquid and Polymer Powder Nail Enhancement Removal

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

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Procedure 17-5

Monomer Liquid and Polymer Powder Nail Enhancement Removal

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### ■ ODORLESS MONOMER LIQUID AND POLYMER POWDER PRODUCTS

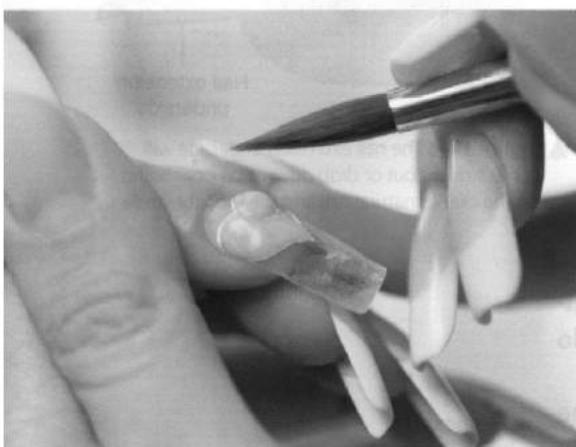
**Odorless monomer liquid and polymer powder products** do not necessarily have the same chemistry as all other monomer liquid and polymer powder products. Rather than use ethyl acrylic, these products rely on monomers that have little odor. Even though these products are called *odorless*, they do have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

In general, odorless products must be used with a dry mix ratio (equal parts liquid and powder in bead). If they are too wet when applied, the client risks developing a skin irritation or sensitivity. This mix ratio creates a bead that looks frosted 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 re-wet 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 it to shape and smooth the surface to perfection.

Odorless products harden more slowly and create a tacky layer called the inhibition layer. This layer can be rolled off or filed away with a 150-grit abrasive used from cuticle to free edge; however, avoid skin contact with these freshly filed particles. Some manufacturers also make a resin that brushes on to cure the tacky layer that must be applied immediately after creating the enhancement. This will create a hard surface on the odorless product that makes filing and shaping easier.

### ■ 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 nail professionals use colors to go



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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. See more on using colored powders in **Chapter 19: The Creative Touch**.

## 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 these perspectives:

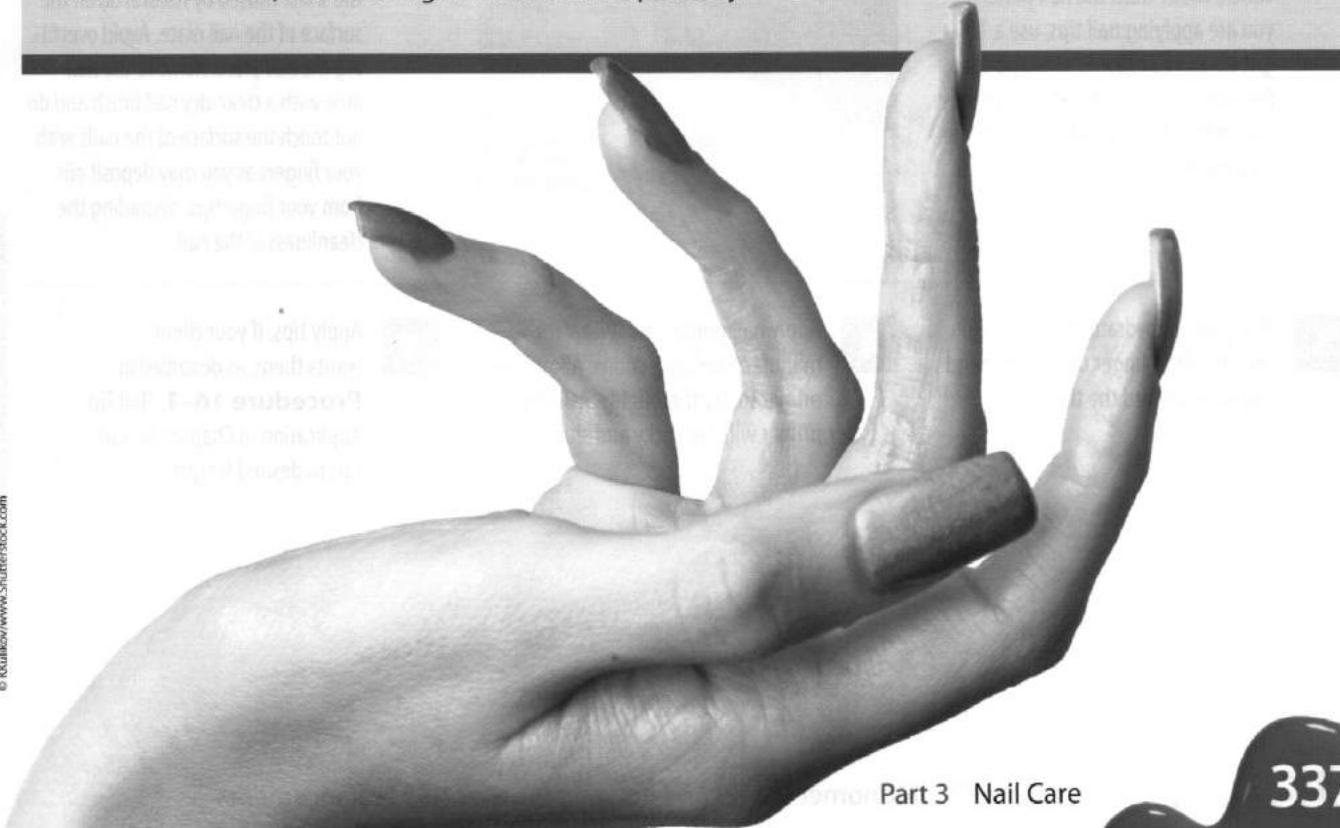
*Top view.* Make sure all the perimeter shapes are consistent.

*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 the application.

*Line of light.* After the nail is smooth and polished, or 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.



# Procedure 17-1

## One-Color Monomer Liquid and Polymer Powder Nail Enhancements Over Nail Tips or Natural Nails

### 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 Nail Enhancements over Nail Tips or Natural Nails Procedure:

- Nail dehydrator
- Nail primer
- Monomer liquid
- Polymer powder
- Application brushes
- Dappen dishes
- Abrasives

### Preparation

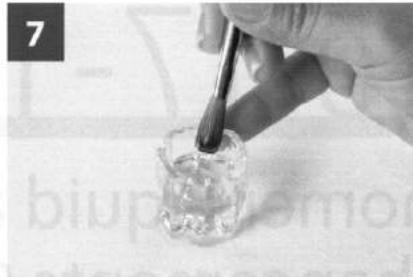
Refer to **Procedure 13-1**, Preservice Procedure.

### Procedure

- 1 Use a pusher to gently push back the eponychium and carefully remove cuticle tissue from the nail plate. If you are applying nail tips, use a 180-grit abrasive or higher to shape the free edges of the natural nails so they match the shape of the nail tip to the stop point.
- 2 
- 3 Apply nail dehydrator to nails. Begin with the little finger on the left hand and work toward the thumb.
- 4 Apply nail primer and follow the manufacturer's directions. Allow nail primer to dry thoroughly. Acid-free primer will dry sticky and shiny.
- 5 File (gently) the nail plate with a medium/fine abrasive (240 grit) to remove the shine caused by natural oil on the surface of the nail plate. Avoid overfilling 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..

**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 to 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 it is too large to shape properly, two smaller beads may be easier.

**9**

Place the 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 the brush back to a perfect point.

**10**

Use the middle portion or "belly" 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**

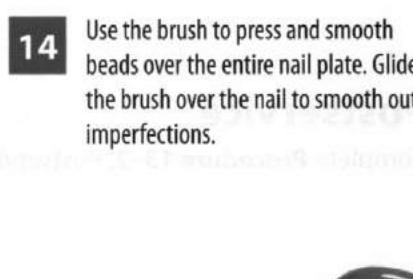
Using a medium consistency, place the second bead on the nail plate below the first bead and next to the free edge line in the center of the nail. Immediately wipe your brush on the table towel gently to remove any product left in the bristles and bring the brush back to a perfect point.

**12**

Press and smooth the product to the sidewalls, making sure that the product is very thin around all edges. Leave a tiny free margin between the product placement and the skin. Avoid placing the product too close to the skin: this may cause the product to lift away from the nail plate or 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 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 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.

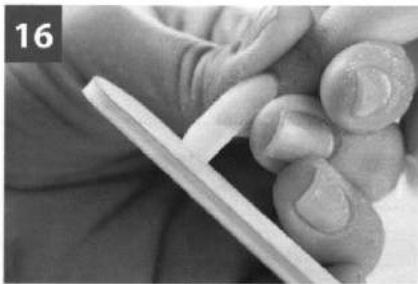
# Procedure 17-1 Continued

## One-Color Monomer Liquid and Polymer Powder Nail Enhancements Over Nail Tips or Natural Nails (continued)

Procedure 17-1 Part 2: How to Varnish on



- 15** Apply more product near the 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.



- 16** Use a medium abrasive (180 to 150 grit) to shape the free edge and to remove imperfections. Then refine with a medium/fine abrasive (240 grit).

**17** Buff the nail enhancement with fine-grit buffer (350 grit or higher) until the entire surface is smooth. Use a high-shine buffer if nail polish will *not* be worn. Remove any dust with a clean, dry nail brush before applying oil.

- 18** Apply and rub nail oil into the surrounding skin and nail enhancement. Massage briefly to speed penetration.

- 19** Apply hand cream and massage the hand and arm.

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

- 21** Polish nail enhancements or apply a gel sealant.



- 22** Present the finished look to your client.

### Postservice

Complete Procedure 13-2, Postservice Procedure.  **LO3**

# Procedure 17-2

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

### IMPLEMENTS AND MATERIALS

In addition to the basic materials on your manicuring table, you will need the following supplies for the Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms Procedure:

- Nail dehydrator
- Nail forms
- Nail primer
- Monomer liquid
- Polymer powder (pink, white and soft white)
- Application brushes
- Dappen dishes
- Abrasives

### Preparation

Refer to **Procedure 13-1**, Preservice Procedure.

### Procedure

- 1** Clean the nails and remove any existing polish.



- 2** Push back the eponychium and remove the dried cuticle from the nail plate.

- 3** Remove oily shine from the natural nail surface with a medium/fine abrasive.

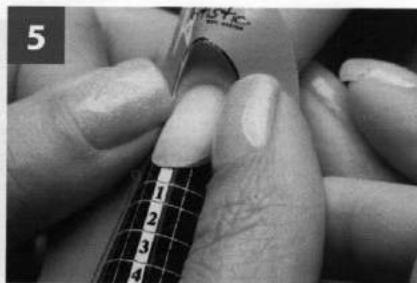


- 4** Remove dust, then apply nail dehydrator to all 10 nails.

Model: Lisa Boone; Nail Artist: Alisha Filmarino Botero. Photography by Ted Enmons.

# Procedure 17-2 Continued

## Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms (continued)



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 the 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.

6 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. Allow the nail primer to dry thoroughly. Acid based nail primer will dry to a chalky white. Acid-free primer will dry to a shiny, sticky surface. Avoid the overuse of nail primers.

### Application Tip:

Do not begin to apply enhancement product to the nail until the primer is completely dry. The nail enhancement could discolor where wet nail primer touches the fresh product. This can also lead to lifting.

7



7

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 also work out of the monomer liquid and polymer powder containers.



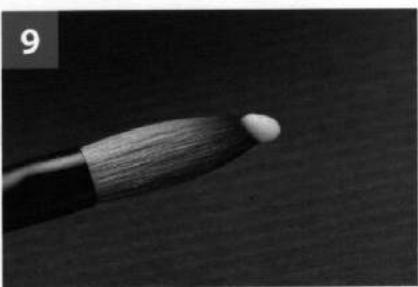
8

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 dappen dish to remove the excess so you can get the liquid you need to pick up the powder.

### Application Tip:

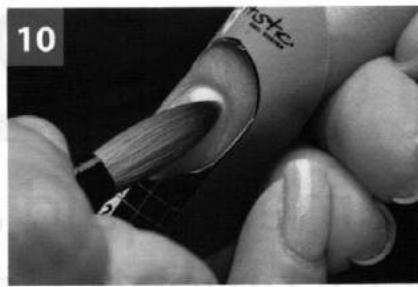
Pay close attention to how you dip the brush into the monomer liquid and wipe it on the edge of the dappen dish to remove the excess liquid. If you dip your brush the same way every time, wipe the same way every time, and pick up your polymer powder the same way every time, your beads will be more uniform. This will help your application to improve, and your nails will become more consistent.

Model: Lisa Boone; Nail Artist: Alisha Rimanado Botero. Photography by Ted Emmons.



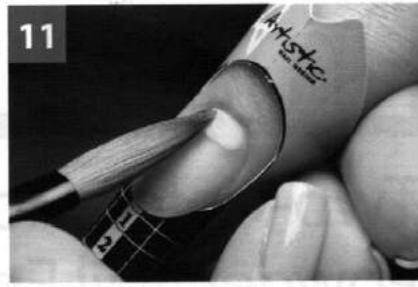
9

To create the lunula (optional), gently wipe your brush to create a flat edge with the hair. Dip the tip slightly into the soft white powder to pick up a small bead on one side of the brush.



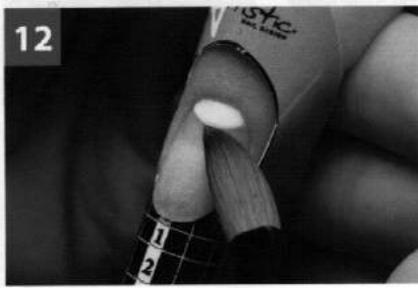
10

Place the bead toward the cuticle area. Press the product at the cuticle line to thin and angle the brush so that the moon gradually thickens to create an edge.



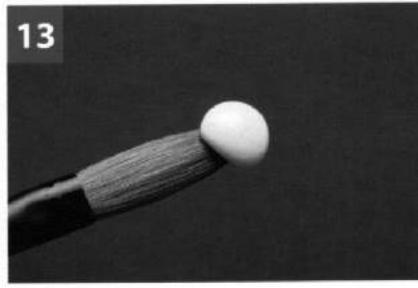
11

Spread the bead from side to side to create the lunula. The edges of the lunula should stop just before the sidewall.



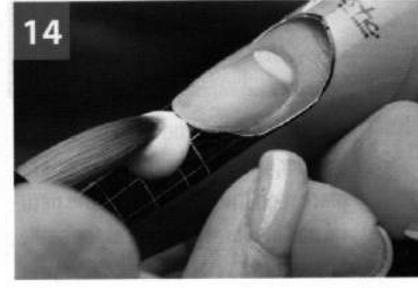
12

Once the product is in place, use the tip of your brush to clean the round edge.



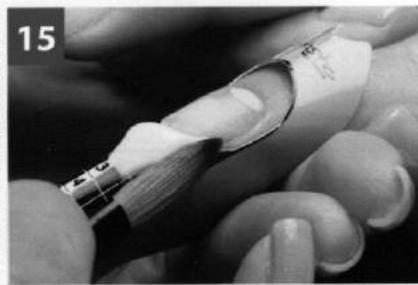
13

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. If this is too large a bead to shape properly, using two smaller beads may be easier.



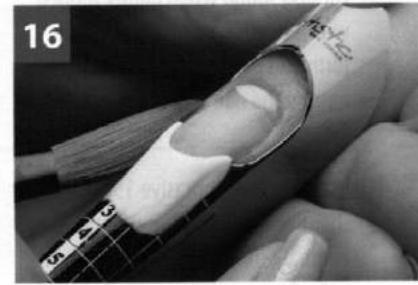
14

Place the white bead in the center of the nail form at the point where it is joined by the free edge. Wipe your brush gently on a clean disposable towel—do not use the table terry towel—to remove any remaining product. Allow your bead to rest for a second 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.



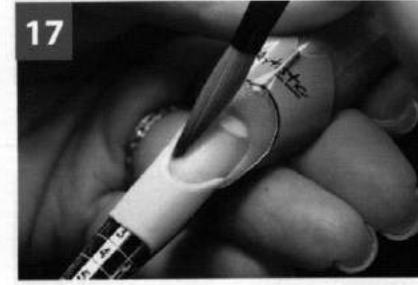
15

Use the front of the brush flat to slide the bead to the corners of the natural nail. Then apply pressure to the center of the brush and pull it toward you. This will stretch the thickness of the bead out onto the form to create the extension edge.



16

Use the body of the brush around the perimeter of the nail to shape your extension.



17

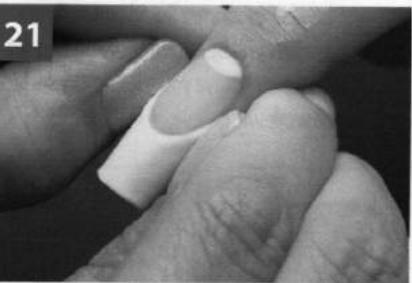
Use the tip of the brush to push your smile line into place and wipe the edge until a crisp rounded smile line is achieved.

# Procedure 17-2 Continued

## Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms (continued)



**18** Pick up a tiny second bead of white powder, with a drier consistency, and place it on the left corner of the natural nail and brush it toward the smile line and center of the nail. Wipe your brush gently on a clean or disposable towel, and then use the tip of the brush to define the smile line to the corner.



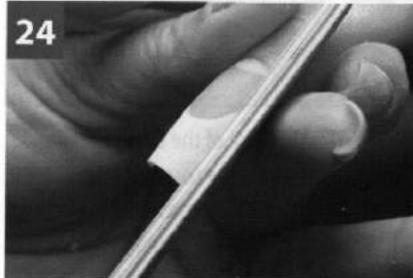
**19** Repeat step 18 on the right corner of your smile line.



**20** Pick up a small bead of pink polymer powder with your brush and place it near the cuticle area of the nail plate. Use the brush to slowly guide the pink bead toward the cuticle area, leaving a tiny free margin between the product and the skin. Then brush over the product, smoothing out imperfections. Remember, the enhancement product application near the eponychium, sidewall, and free edge must be thin for a natural-looking nail.

**21** When the nail enhancement begins to harden, loosen the form and slide it off. The 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. Remove the form and gently press in the sides to narrow the nail as it dries.

**22** Repeat steps 8 through 21 on the remaining nails.

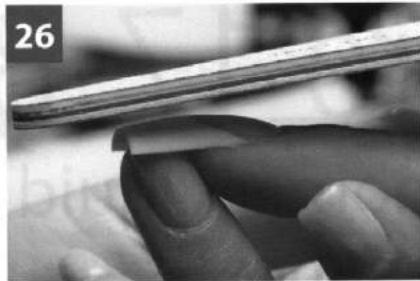


**24** File the left side and right side of all nails.

Model: Lisa Boone; Nail Artist: Alecia Filimando Botelho. Photography by Ted Emmons.



**25** File the underside of the nail extensions on both sides of each nail.



**26** Glide the abrasive over the nail with long sweeping strokes to further shape and perfect the enhancement surface. Remember that the product should be thin near the cuticle, free edge, and sidewalls.



**28** Apply and massage cuticle oil into the nail and surrounding skin.

**27** Buff the nail enhancements with a 180- to 240-grit buffer. Remove any dust with a clean, dry nail brush before applying oil.

**29** Have your client wash her hands thoroughly with soap and water and use a manicure brush to remove dust and chemicals that may be present on the skin.

**30** Apply hand cream and massage the hand and arm.

**31** Clean the nail enhancements.



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



**33** Present the finished look to your client.

Model: Lisa Boone; Nail Artist: Alissa Rimbando Bonato. Photography by Ted Emmons.

## Postservice

Complete Procedure 13–2, Postservice Procedure. ■ **L04**

# Procedure 17-3

## One-Color Monomer Liquid and Polymer Powder Maintenance

This procedure may be completed using hand files/abrasives (as in steps 1 through 13) or using an electric file (as in steps A through F).

### IMPLEMENTS AND MATERIALS

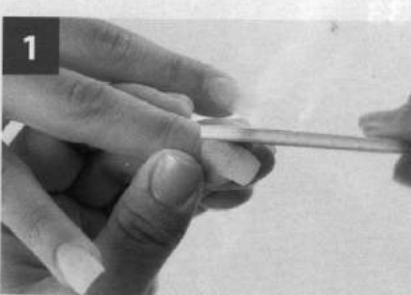
In addition to the basic materials on your manicuring table, you will need the following supplies for the Two-Color Monomer Liquid and Polymer Powder Nail Enhancements Using Forms Procedure:

- Nail dehydrator
- Polymer powder
- Nail primer
- Application brushes
- Monomer liquid
- Dappen dishes
- Abrasives

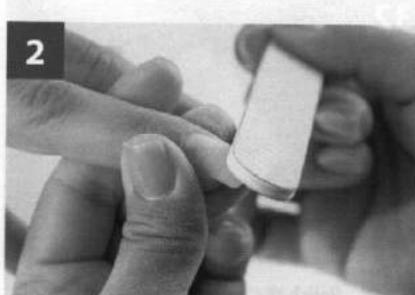
### Preparation

Refer to **Procedure 13-1**, Preservice Procedure.

### Procedure



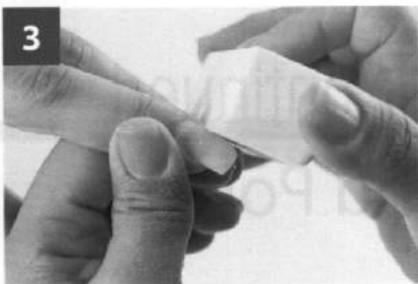
- 1** Remove the existing polish. Using a medium/coarse abrasive (150 to 180 grit), flat against the existing product, carefully smooth down the ledge until it is flush with the new growth of nail plate. Smooth out any areas of product that may be lifting or forming pockets. Be careful not to dig into or damage the natural nail plate with your abrasive.



- 2** Hold the medium abrasive (150 to 180 grit) flat and glide it over the entire nail enhancement to refine and thin the product at the free edge until the white tip appears translucent. Take care not to damage the client's skin with the abrasive.

#### CAUTION:

Do not use nippers 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.



- 3** Use a medium-fine abrasive (180 grit or higher) to smooth the product and blend it into new growth area without damaging the natural nail plate. Remove the oily shine from the natural nail surface.

- 4** Use a clean nylon manicure brush to remove dust. Apply nail dehydrator to all nails.

- 5** Apply nail primer to all nails following the manufacturer's directions. Allow the primer to dry thoroughly. Avoid applying the nail enhancement product over wet primer, since this can cause product discoloration and service breakdown. Avoid overusing the nail primer.

### Application 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 her hands against her face. Touching the prepped nail plate—or getting makeup or moisturizer on it—can deposit oils and cause possible lifting.



- 6** Prepare the monomer liquid and polymer powder. Pick up one or more small beads of enhancement product and place them at the natural nail area, the regrowth.



- 7** Use the brush to smooth these beads over the new growth area. Glide the brush over the nail to smooth out imperfections. The application of the enhancement product 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 the skin.

- 8** Pick up one or more small beads of enhancement product and place them at the center of the nail to create the apex. Pat beads into place and then smooth entire nail surface.

- 9** 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, or an electric file (see electric files steps A-F).

### Application Tip:

Take caution when reducing existing product on the nail while preparing for nail enhancement maintenance. Using a coarse-grit abrasive or sanding band can scratch and damage the natural nail plate and may cause rings of fire.

# Procedure 17-3 Continued

## One-Color Monomer Liquid and Polymer Powder Maintenance (continued)

### Alternative Steps For Performing A One-Color Monomer Liquid And Polymer Powder Maintenance Using An Electric File

If you are performing the maintenance service using an electric file, follow the steps below.

- A** Follow step 1 above in this procedure.
  - B** With a fine- or medium-barrel bit, shorten the lengths and contour the tops of all the nails. Remove any UV gel sealants you may have applied previously and any discoloration and reshape and rebalance the entire top surface of all 10 nails.
  - C** With a rounded-top safety bit, bevel the cuticle area product flush with the natural nail. Be careful not to touch the natural nail with the bit. Use the safety bit flat to the nail to bevel and remove more product than normal. Beveling and removing more product will remove any lifting and ensure no fill lines. Remove the dust with a clean, dry sanitary nail brush.
  - D** Proceed to steps 4-9 for product application.
  - E** File and shape the nails with a fine- or medium-barrel bit. Refine your cuticle work with a safety bit or cone and finish the nails.
  - F** Go to Step 10 and follow through to the end of the service.
- 
- 10** Buff the nail enhancement, remove the dust, and apply nail oil to the enhancement and the surrounding skin.
  - 11** Apply hand cream and massage the hand and arm. Wash the client's hand and nails with soap and water.
  - 12** Clean nails before application of nail polish or gel sealant.
- 13** Present the finished look to your client.

### Postservice

Complete Procedure 17-2, Postservice Procedure.  **LO5**

# Procedure 17-4

## Crack Repair for Monomer Liquid and Polymer Powder Nail Enhancements

### 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:

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

### Preparation

Refer to **Procedure 13-1**, Preservice Procedure.

### Procedure



- 1** Remove the existing polish or gel sealant. File a V shape into the crack or file flush to remove crack. File more than just the crack for extra protection.

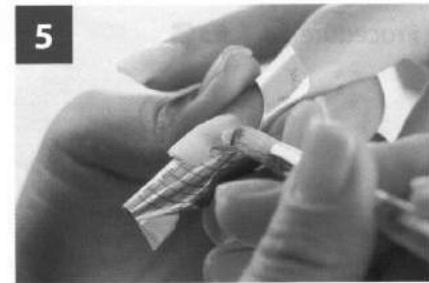
- 2** Buff and remove any dust with a clean, dry nail brush. Apply nail dehydrator to any exposed natural nail in the crack.



- 3** Apply nail primer to any exposed natural nail in the crack.



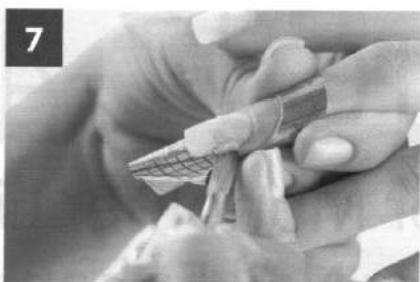
- 4** If the crack needs support, apply a nail form.



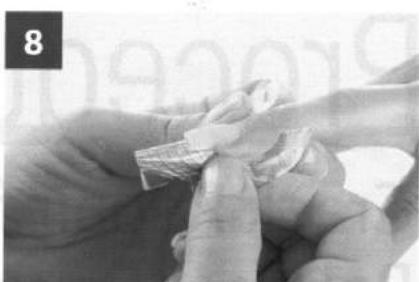
- 5** Prepare the monomer liquid and polymer powder. Pick up one or more small beads of the product and apply them to the cracked area. If you are using the two-color system, be sure to use the correct color of polymer powder.

**6**

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

**7**

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.

**8**

Remove the form, if used.

---

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

**10** Buff the nail enhancement until it is smooth. Remove the dust and apply oil to the enhancement and surrounding skin. Wash the client's hand and nails with soap and water. Apply hand cream and massage the hand and arm.

**11** Clean nails before application of nail polish or gel sealant.



**12** Present the finished repaired nail to your client.

## Postservice

Complete Procedure 13–2, Postservice Procedure.  **LO6**

## Procedure 17-5

# Monomer Liquid and Polymer Powder Nail Enhancement Removal

## IMPLEMENTS AND MATERIALS

In addition to the basic materials on your manicuring table, you will need the following supplies for the Monomer Liquid and Polymer Powder Nail Enhancement Removal Procedure:

- Metal or glass bowl
  - Acetone

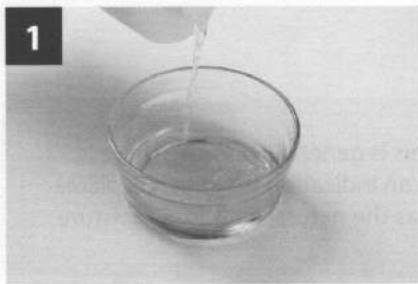


Although you may see gallons of industrial acetone at your local hardware store for a few dollars less than at your beauty supply, do not be tempted to purchase this for use on your clients. These products have not been tested or approved for use on human skin. Most nail enhancement removal products in the nail industry are enriched with aloe and other skin softening agents that help prevent drying of the skin. Using these products is safe and more effective for your clients.

## **Preparation**

Refer to **Procedure 13-1**, Preservice Procedure.

## Procedure



- 1 Fill the glass bowl with enough acetone or product remover to cover 1/2" (1.27 cm) higher than the 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 20 to 30 minutes, or as long as needed to remove the enhancement product. Refer to the manufacturer's directions and precautions for nail enhancement product removal.

**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 the natural nail is free of product. Use a plastic-backed cotton pad to remove the remaining product.

**4**

- Condition the skin and nails. Lightly buff the nails to smooth any remaining ridges or residue. Recommend that the client receive a basic manicure.

**5**

- Present the finished look to your client.



## Postservice

Complete Procedure 13–2, Postservice Procedure.  **LO7**

**fyi**

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 24 hours, and the nail plates will seem to be more rigid and thick.

## ■ 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 and polymer nail enhancements without lunula, using nail 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?