

## Chapter 5

### What's On My Nails?

In the previous chapter I explained to you what “Gel” nails were not. Now, I will help you to understand what some of the most popular and widely known artificial nail enhancement products are, what is available to you, and what is being used on your nails. Let's start with acrylic nail products. There are two main types.

#### ***ACRYLIC NAILS***

##### ***METHYL METHACRYLATE (MMA)***

This type of acrylic nail product can be found predominantly in what has been known as and said to be, a “discount nail shop” or a “non-standard shop (NSS).”

In some cities you can get a full set of MMA liquid monomer based acrylic nails for as little as ten to fifteen dollars and fills for as little as seven to thirteen dollars. More common though, is to pay about twenty dollars for a full set and fifteen to eighteen dollars for a fill.

If you think your manicurist is using MMA on your nails, ask them. You may get an honest answer and they will admit they are using it. More often than not, you will be told they do not know what they are using or they may tell you they are using OPI. They may say OPI because OPI is a very familiar brand to the public. If you want to test your acrylic nails to see if they are MMA or EMA based, you can follow the suggested guidelines in the next chapter.

Information on what Methyl Methacrylate based acrylic nails are, can be found in Chapter 9, “*Chemical Confusion.*”

#### ***ACRYLIC NAILS***

##### ***ETHYL METHACRYLATE (EMA)***

This type of acrylic nail product is used predominantly by nail technicians who are working in middle or upper end nail salons, either independently or in an establishment with multiple manicurists.

A manicurist using Ethyl Methacrylate liquid monomer based acrylic nail products will generally charge anywhere between twenty and fifty dollars for a full set of acrylic nails. A nail care specialist or nail care artist may charge as much as eighty dollars or more for a full set of nails.

The difference between manicurists, nail technicians and nail artists should be the level of training and experience they have. Often, the difference is no more than a play on words. Remember to look for certificates of training.

If you are not sure what type of acrylic nail product your manicurist is using, ask them. You may also consider asking them if you could see the Material

Safety Data Sheet (MSDS). The MSDS will give you an idea of what chemicals the product is made of. If you want to test your acrylic nails to see if they are MMA or EMA based, as I mentioned earlier, you can follow the suggested guidelines in the next chapter.

Information on what Ethyl Methacrylate based acrylic nails are can be found in Chapter 9, “*Chemical Confusion.*”

## **GEL NAILS**

Gel nails are typically traditional acrylic chemicals mixed together for the nail technician and are very sticky. Most of the companies who manufacture gel products put the gel in small jars or pots. Some companies also have colored gels. Gels have become very popular because they usually have very little or no odor. Gels are applied using a step-by-step technique, scooping the gel from the container with a brush and applying it to the nail. After the gel has been applied, it will be introduced to an ultra violet light to begin the curing process. There are chemicals in the gel product called photo initiators that react to the ultra violet light and cause the gel to harden. Gels are more flexible than acrylic nails. If you have had allergic reactions to acrylics, gels *may* be a better choice for you.

However, some individuals who have changed from acrylics to gels because of allergic reactions are beginning to find after time, they react to gel products as well. This could be because gels have a “sticky” layer that must be wiped off with a solvent after the final curing has been completed. If this sticky layer is not wiped off appropriately, allergic reactions are possible. In order to help avoid possible allergic reactions, the nail technician should apply the solvent to a cotton pad, place the cotton pad on the nail enhancement and pull forward. A fresh cotton pad should be used for each nail enhancement. The sticky residue is actually called a “*dispersion*” layer. The dispersion layer is uncured product that has to be wiped off in order to have a high shine finish. If the dispersion layer and the solvent are mixed together, a completely different chemical action may take place. This is how an allergic reaction can occur and this is why the cotton pad with the solvent should be placed on top of the enhancement and pulled forward. Your technician can *scrub* the enhancement with a clean cotton pad and solvent **AFTER** the dispersion layer has been wiped off in order to achieve the high shine that should be there (the shine will be there if the product has been appropriately cured).

## **LOW ODOR/NO ODOR ACRYLICS**

This type of acrylic is usually Ethyl Methacrylate liquid monomer (EMA) based and was introduced to the nail care industry because upper-end salons

and spas wanted to offer artificial nail enhancement services, but did not want to deal with the smell of traditional acrylic nail products. This type of acrylic did well until clients started having allergic reactions to it. It seemed as though nail technicians were being careless in their application because there was no smell. They thought – no smell, no harm. This could not be further from the truth. The truth is low odor/no odor acrylic nail products must be applied the same way traditional acrylics are applied, according to the manufacturers directions and making sure the acrylic liquid (monomer) does not touch the client's skin.

### ***WRAPS***

Wraps usually consists of an adhesive (glue), a material such as silk, linen, fiberglass, or paper, and an accelerator. Wraps are usually a multi-step process consisting of placing adhesive on the nail plate, activating the adhesive with the accelerator, placing a piece of material over the nail and then repeating the adhesive and accelerator steps as directed by the manufacturer. This process can be harmful in and of itself because when the accelerator blends with the adhesive, chemical reactions happen quickly, making the adhesive harden. If this process is not followed correctly you may feel a burning sensation. If a nail technician has not had appropriate training with this type of system, he or she can cause great pain and damage to your natural nail, or worse, loss of the entire nail plate. Caution should be followed by those who have this type of product on their fingernails because a great deal of cyanoacrylate (glue, adhesive) is used in some of these types of applications and many of you are allergic to the adhesive.

### ***ACRYLIC DIP SYSTEMS***

This type of system is another way of offering the nail technician a product with no smell. This system is usually done by applying an adhesive to the natural nail, then dipping the nail into an acrylic powder. The proposed advantage is supposed to be an acrylic nail with no smell. Unfortunately, many clients are having allergic reactions to this type of system, because of the amount of adhesive (cyanoacrylate) that is used on the natural nail, much the same as is with some of the wraps mentioned above.

### ***GEL/POWDER MIXTURE***

This process is done by applying a gel to the nail, and sprinkling acrylic powder on top of the gel before the gel is cured. This is being done by manicurists in hopes of making their gel product as strong as an acrylic nail.

### ***LIQUID PLASTIC***

This type of product is also known as a High Density Polymer; Polycarb and

Polycrylic. Several companies offer this type of nail care product as an alternative for those who may be allergic to other products. It is applied much the same as a gel, then cured with a UV light. The chemical composition of this type of product is a little different than a traditional gel. The manufacturers and distributors of such products claim this product is a custom synthesized blend of plastics. One of the most noticeable differences with several of these products is, if you do not slowly introduce the product to the UV light after it has been applied to your nail, you will feel an unbearable heat spike. Heat spikes happen because the molecules in the product are curing or binding together too fast causing friction, which causes heat, which then reaches the nerve endings in your nail bed causing the burning sensation. This type of product is usually loaded with photo initiators, which is what causes the product to react with the UV light in order to harden completely. Some products have such a high content of photo initiators that when the curing process is complete, the finished nail will be shiny. Some manufacturers of this type of product will include *less* photo initiators, thus causing very little or no burning sensation during the curing process. Some of these products will have a sticky residue which must be removed after the curing process is complete, similar to the residue a gel has after curing.

**WORD OF CAUTION:**

At least one of the manufacturers of this type of product, at the time of this entry, is known to include a cancer causing chemical in a portion of their nail care system. This chemical is called "*Methylene Chloride*" and is on California's Proposition 65 list, as a known cancer causing chemical. Some of the manufacturers of these products say they use *Methylene Chloride* in their bonding agents in a *small* percent ratio because this chemical *helps the polymer to bond to the natural nail plate*.

If you have this type of product on your nails you may want to call the distributor, supplier or manufacturer directly and ask them if this chemical is in *their* product, in *any* amount.

The reason I suggest you ask if it is present in *any* amount is because the manufacturer may be hiding behind the veil of disclosure. What this means is, if there is not "*too much*" of a *questionable* chemical in the product they are manufacturing, *they may not have to tell you it is in there at all*.

In fact, for those of you who will be questioning the manufacturers, distributors, representatives and manicurists associated with this type of product, do not be surprised if they immediately respond by telling you that their product or the product they use DOES NOT contain this chemical.

Ask the person you are talking to if they would be willing to sign a statement noting such. Don't be surprised if they refuse this request. They may also say, "*There is a very tiny amount of this chemical present, but it is so minute that "OSHA" does not regulate it.*" The latter statement is ridiculous in and of itself due to the fact that, at the present time, the entire cosmetic industry is grossly under regulated. Furthermore, in order for a chemical to be found "safe" for use, it must be put through a battery of tests, significant data must be recorded and it must go through the appropriate agencies and powers that be along the way in order to claim it "safe". This is a very timely and costly process that a manufacturer will probably not engage upon unless or until they are forced to.

For those of you who have questions and who will continue to search for more information on this topic, you may want to consider adding Toluene and Dibutyl Phthalates to your quest. These two chemicals are readily found in most brands of nail polish. Toluene is a known reproductive toxin and Dibutyl Phthalates have recently been found to cause testicular abnormalities in baby boys whose mothers were highly exposed to this chemical during pregnancy.

For information on what has happened in California to cause a stirring in the cosmetic industry, read Chapter 18, "*California, Cosmetics and the Law,*" and remember, no one is going to take care of you better than you will yourself. Ask questions. Ignorance is not bliss. You have the right to know what is being used on you and whether the products being used contain trace amounts, or significant amounts of cancer causing chemicals or reproductive toxins so that you can make an informed and educated decision on whether you want the product used on you or not.