

Update for Nail Technicians - Methyl Methacrylate (MMA) Monomer

Methyl Methacrylate Liquid Monomers

In the infancy of the professional nail industry, methyl methacrylate (MMA) was a commonly used ingredient in professional nail products. These products were often referred to as "dental acrylics" or "porcelain nails." By the end of the 1970s, the FDA had received so many complaints related to the use of MMA that it was forced to take action against several manufacturers of these products.

MMA-related complaints ranged from skin allergy to permanent loss of the nail plate. It can also cause loss of sensation in the finger tips. As the problem became more serious, the FDA warned manufacturers that further use of MMA in nail enhancement products was inappropriate. Liquid monomer products formulated with MMA were considered too dangerous for use in the beauty industry. In a recent review, Allen R. Halper of the FDA's Office of Cosmetics and Colors stated that the FDA considers MMA "to be a poisonous and deleterious substance and may take regulatory action against any products containing methyl methacrylate monomer and may take legal action against those involved."

Methyl Methacrylate Polymer Powders

Nail Technicians who are aware of the dangers of MMA monomer are often confused because many acrylic powders appear to contain this ingredient. But this is a misconception: Only solid, polymerized MMA (PMMA) is used in powder. Unlike MMA monomer, PMMA will not cause adverse skin reactions or other problems, because the polymer is thousands of times larger than the original MMA molecule, and therefore cannot penetrate the skin. PMMA is safely used in many common products ranging from dental prosthetics to Plexiglass™ and Lucite™.

Ethyl Methacrylate Liquid Monomers

Most responsible manufacturers formulate their liquid monomer with ethyl methacrylate (EMA). The nail industry has had considerable experience with EMA, which has been declared safe for use by trained nail technicians by the prestigious Cosmetic Ingredient Review Board on two separate occasions.

Recommendations

The use of liquid nail enhancement products containing MMA is unsafe and unwise.

Serious adverse skin reactions and permanent nail deformities are only part of the risks of using MMA. MMA creates enhancements that are too rigid for the

natural nail plate. MMA enhancements resist breaking if accidentally caught or jammed. This often leads to painful breakage of the nail plate near the eponychium which may result in severe infections. Nail technicians may be found legally liable if they knowingly use products containing MMA. They may be subject to criminal penalties and fines, and/or be sued by injured clients.

How Can I Tell?

It is usually not difficult to tell if a product contains MMA. Here are three simple things to watch for:

1. Unusually strong or strange odour which doesn't smell like other acrylic liquids.
2. Enhancements which are extremely hard and very difficult to file even with coarse abrasives.
3. Enhancements that will not soak off in solvents designed to remove acrylics.

Discount pricing can also be an indicator of MMA usage. MMA costs several times less than EMA.

The last sign in the list above is the most important indicator. Nail technicians who come across artificial nails made with MMA-containing ingredients are usually surprised to hear how difficult it is to remove the product. The only way to remove the products is by filing with a very coarse abrasive or drills, which usually results in further damage to the client's nail plates and nail beds.

Closing Thoughts

We recommend against nail technicians using liquid monomers which are formulated with MMA. We believe that the significant danger to both nail technicians and clients makes the use of MMA both unwise and unethical. The health risks and public relations problems created by the use of MMA seriously threaten the entire professional nail industry.