Pigment / Dye Quality Standards for the Micropigmentation Industry

Walnut Creek, CA - January 30, 1994 – Sterile high quality pigments and dyes should be used when performing a micropigmentation procedure. But what is a high quality pigment or dye? What physical and chemical properties characterize high quality colors? What types of colors will provide the Micropigmentation Specialist (MPS) the best media for both permanent cosmetic and paramedical procedures?

Ideally, pigments and dyes (or colors) should have the following physical and chemical properties:

- Sterile
- Composed of particle sizes that do not migrate and keeps its color integrity in the skin
- Have the ideal viscosity allowing for easy priming of the micropigmentation machine & minimal splattering
- Does not dry out during the procedure and remains the same consistency
- Long shelf life
- An assortment of premixed colors, which do not vary from, batch to batch
- Prepackaged colors available in a variety of sizes for per patient / client usage ensuring sterility and minimizing cross-contamination
- All color ingredients listed on the bottle label

STERILE PIGMENTS AND DYSES

First, and foremost MP colors should be sterile. Pigments are usually sterilized by moist heat or by gamma irradiation. Pigments are usually made by mixing pigment powders with a solution of the following ingredients, water, alcohol, & glycerin. The resulting mixture is placed under heat and pressure. High temperature and pressure can affect the pigment's concentration and viscosity and crystalline structure. The resulting pigment mixture can be either too thick or too thin. This process is time consuming, and messy.
Autoclaving, too, has a tendency to change pigment viscosity. The high heat of autoclaving can possibly affect the structural composition of the pigment particles and change the pigment's concentration. Gamma irradiation is believed to be an effective form of sterilization. Gamma irradiation is thought to have the least effect on the structural integrity of the pigment particles.

Unless one has the necessary equipment and the diligence to ensure a completely sterile product, purchasing prepackaged sterile pigments from a reliable supplier is the best option. When purchasing pigments ask the supplier how the pigments are sterilized, what tests are performed to ensure sterility and the frequency of the testing? Tests for microbial activity throughout the sterilization process should be documented and performed at set intervals. Every production lot should be identified. Check your pigment labels.

Often MPSs are purchasing sterile pigments but are contaminating the pigment by dipping into the sterile container with a contaminated object or by pouring the sterilized pigment into an unsanitized / unsterile pigment cap. The pigment may come packaged in large quantities, (i.e. 2 cc), with enough pigment for multiple procedures. Once the seal on the bottle is opened pour enough pigment for individual procedures into individual presterilized single use disposable pigment caps or pigment rings.

PIGMENT AND DYE INGREDIENTS

Check with the supplier and make certain all ingredients are listed. Remember the FDA has not approved the usage of micropigmentation pigments or dyes in the skin. Until such approval is provided be extremely cautious. Be safe and thoroughly informed as to what substances were used to formulate the pigments or colors you are using. Micropigmentation pigments and colors are usually formulated with the iron oxide, glycerin, alcohol, titanium dioxide, and certain red and orange dyes. Iron oxide, more commonly known as ferrous oxide, has been used successfully for years without any known side effects.

Scrubitize your supplier's products be certain that your supplier's colors are not comprised of unidentifiable ingredients. Check for substances that can lead to allergic reactions or possibly contribute to pigment migration, for example, vegetable dyes or India ink. Pigments made from vegetable dyes may cause an allergic reaction if the patient is hypersensitive to the vegetable derivative and India ink can lead to migration.

PARTICLE SIZE

Pigment particle size should be large enough to prevent migration. Theoretically, 6 microns is the optimum particle size to maximize pigment retention in the dermis. If the particle size is too small the pigment may be reabsorbed in the tissue or migrate in the skin.

VISCOITY

The pigment ingredient ratios (iron oxide: alcohol: glycerin) determine the color's viscosity. The ideal ratio mix should maintain an optimum viscosity allowing for easy priming of the
micropigmentation equipment, and for the smooth application of the pigment into the dermis with little splattering.

EVAPORATION

Some colors are suspended in high concentrations of water and/or alcohol. If too much water or alcohol is used to keep the pigment suspended in solution the concentration becomes diluted. The color's viscosity will be too thin and have a runny consistency taking longer to prime the equipment, and to micropigment the skin. In addition, a high alcohol or water content causes the color to dry out or evaporate while performing the procedure. The color becomes flaky and will cake, clogging the needle tube.

SHELF LIFE

The ideal color should have a long shelf life when completely sealed. Additionally, when performing a procedure the pigment should keep its integrity throughout the procedure. It should not dry out but rather keep the same consistency. Check the color label for an expiration date.

PREMIXED COLORS

A wide range of colors should be available especially for matching skin tone colors. One of the most difficult tasks the Micropigmentation Specialist performs occurs before the actual procedure; custom blending colors to match skin tone colors. Having a good selection of colors to choose from initially would eliminate a very tedious and time-consuming process. The mixing and remixing of colors to achieve a natural looking skin tone color can be quite cumbersome.

The colors should not vary exceedingly from batch to batch. There should be virtually no color deviation.

PACKAGING FOR PER PATIENT USAGE

To minimize cross contamination, sterile colors should be available in a variety of volume sizes. Each size should contain just the right amount of color to perform a specific procedure. For instance, colors could be individually package for per patient usage for an eyeliner procedure or brow enhancement procedure, or packaged for skin patch testing only.

These ideal pigment and dye characteristics are not inclusive but highlight properties that lend to a more efficient and effective Micropigmentation application. For more information or comments regarding micropigmentation colors contact Yolanda L. Moore, M.P.S. via email at yolanda@lemormpi.com.

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About LeMor MPI:

Yolanda Moore, MPS founded the LeMor Micropigmentation Institute in 1989. Yolanda is a recognized expert/authority in the micropigmentation field both domestically and internationally. Her articles have appeared in beauty magazines such as Self Magazine, and Skin Inc. Yolanda has also appeared on the “Good Evening Magazine” television show.

Yolanda has trained thousands in the art and science of permanent cosmetics and her 13 years of experience translates into over 10,000 hands-on permanent cosmetic procedures.

Yolanda’s background and education is unique to the field of Micropigmentation. She holds multiple degrees in both biology and chemistry as well as a Master’s degree from the University of California, Berkeley.

Yolanda is a proud member of the Society of Permanent Cosmetic Professionals, the International Micropigmentation Association and the American Academy of Micropigmentation.

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