Tips for Tinting Lenses Made From Trivex™ Material

Anyone that knows how to tint lenses can tint lenses made from *Trivex* material – it's really that simple. The basic equipment, dyes and techniques that apply to other lens materials, apply to *Trivex* material also. Even so, there are a number of techniques that can be employed to obtain a higher quality tint product and reduce spoilage. Here are a few tinting tips to maximize the tinting of lenses made from *Trivex* material.

Check for Hard Coating

Lenses that have been surfaced may or may not have a back surface hard coating applied. While *Trivex* material accepts lens dye readily, on occasion lenses may exhibit uneven coloring, due to uneven dye absorption. The way to avoid this is to hard coat the back surface of the lens with a tintable coating. This will also help produce more consistent color results.

It is not recommended that a dip hard coating be added after the lens has been tinted, as it can cause the lens dye to leach into the hard coating mixture, reducing the lens' color density and contaminating the hard coating material.

Preparing the Lens for Tinting

As with any lens material, the surfaces of lenses made from *Trivex* material must be clean before tinting. Since *Trivex* material has superior resistance to chemicals, most laboratories and eyecare professional offices use acetone or alcohol to clean the surfaces of lenses made from *Trivex* material to remove oils and debris. Wearing gloves will help keep the lens surfaces clean, prevent the transfer of oil from your hands, make it easier to grip the lens during the tinting process and, of course, keep your fingers tint-free.

Some labs have found that using acetone or alcohol to clean lenses before tinting in general can adversely affect the dye they use. If this occurs with lenses made from *Trivex* material, use a warm, mild detergent bath, ensuring that all debris and greasy residue have been removed from the lenses before placing them in the dye.

The last preparation step is to use a commercially available lens prep solution made specifically for preparing

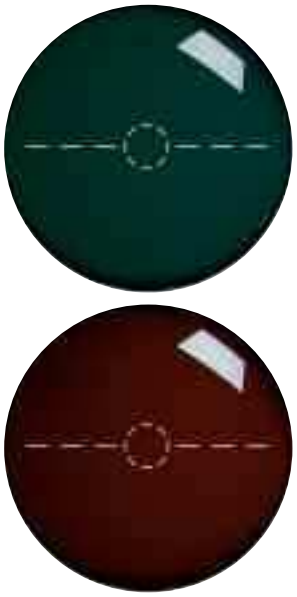

Photo courtesy of Hoya Vision Care

lenses for dyeing. These solutions help to eliminate color blotching and promote even color absorption. They are inexpensive, easy to use and provide improved coloring results.

Dye Tank Temperature

Not all lenses made from *Trivex* material tint the same. This is because of variations in the composition of the individual manufacturer's lens material and hard coating. Some lens manufacturers suggest using a tinting temperature of 175° F (79° C), while others suggest using normal tinting temperatures (between 200° F to 205° F or 93° C to 96° C). PPG technicians have seen improved tinting results and reduced blotchiness at temperatures between 167° F and 176° F (75° C and 80° C.)

Because of these variations, check with the lens manufacturer to determine the recommended temperature for tinting their lenses made from *Trivex* material.

As with any other lens material, keeping the dye temperature consistent, and at the recommended temperature, is important. A reliable and accurate thermometer, that is designed especially for dye vats and tanks, should be used unless the dyeing equipment itself provides the exact temperature inside of each dye tank.

Color Correcting

Many optical offices use a single set of color samples when selling patients a lens tint. Since all lens materials tend to differ slightly with the same dye, the color results you obtain with lenses made from *Trivex* material may vary from the sample color. This is easily fixed by color correcting the lenses using the appropriate color(s). Check with the dye manufacturer for recommendations for doing this. To avoid this problem altogether, make a set of colored lens samples using lenses made from *Trivex* material and use them when showing lens tint colors.

Length of Time

While lenses made from *Trivex* material and their hard coatings readily accept lens dye, they should be tinted in short periods of time and checked often. This technique is not specific to *Trivex* material; it is a good procedure for avoiding color shift problems and making the lenses too

dark for any lens material. Try two-minute intervals. Bring the lens out of the dye and rinse it in warm water in between inspection and re-insertion into the dye vat.

Constant Stirring

Lens dye is made of large particles that tend to settle out of the dye mixture if left alone too long. This means that a heavier concentration of dye will settle at the bottom of the tank if the dye is not stirred often enough. Uneven dye density creates uneven results on the lenses. The way to avoid this problem is to stir lens dyes often. Some manufacturers have created dyeing equipment with stirring features that automate this process. The need to stir lens dye is not unique to *Trivex* lens material, so the automated stirring feature can be useful for all lenses.

Know Your Brand

Each manufacturer uses slightly different techniques and surface coat formulas in making lenses made from *Trivex* material. This means they can tint differently, e.g., rate of absorption, different hues, etc. While it is not common to use lenses from two different manufacturers in brand-new orders, if only one lens is being replaced, it is important to know the manufacturer of the lens that is not being replaced so that the new lens can be matched to it. One way to do this is to ask the laboratory to provide the lens package with each order, and then staple it to the patient's work order and/or record. For electronic records, the lens brand can be added to the appropriate field. Lenses from the same manufacturer should always be used in both eyes of a pair of glasses. Doing this will prevent tedious color touch-ups and the need to darken/lighten one lens to match the other, due to differences in dye absorption characteristics.

Adding UV

Trivex material inherently absorbs ultra-violet light up to 394nm. This means that UV absorbing dyes are not needed to obtain this high level of UV blockage. Using dyes that provide slightly higher levels of UV wavelength absorption may be used, but they will likely add a color cast to the lens, such as yellow.