Lens Holders and Lens Tinting

Lenses should be mounted in the lens holder so that they are not under pressure. Any pressure exerted upon a lens at tint solution temperatures may cause warping. Lens holders that are spring loaded or place tension on the lenses in any other way should not be used. Be sure that the lens coloring system is operating at the correct temperature. Put the lenses s-l-o-w-l-y into the color tank. We recommend lenses be placed into the tank slowly because piercing the surface tension too quickly may cause a boil-over. Tinting times are a function of lens cure, tint concentration and temperature. A general timing chart is provided as a starting point; however your own experience will determine the optimum immersion period more exactly. After the lenses have been tinted to the desired color, it is suggested that they be put in the Lens Prep II™ solution again, to allow excess tint to come off more easily. Rinse under cool tap water or in a beaker of water. The lenses should be wiped with a very soft lint-free cloth or Kaydry™ to avoid scratches.

Color removal using neutralizers

Removing Molecular Catalytic™ tint is achieved quickly by using BPI® Neutralizer II™. This is a strong agent which will remove the color from the lens in about twice the time the lens took to tint. There may be variations in time, because the lenses are not all made to the same formula and specifications, but the lenses will come back to an almost clear color. Try BPI® PolyClear™ for coated lenses or BPI® H2O Neutralizer for coated polycarbonate lenses. If one lens is darker than its mate, then either the darker lens could be neutralized, or the lighter lens could be put into the tint tank unit until it has attained the proper color.

Situations that can occur while tinting

BLOTCHING, CIRCLE-LIKE EFFECTS: Blotching, circles, or half-moon effects are the result of tinting a lens that has been unevenly cured. This means that the density of the lattice structure (lens hardness) varies. The soft parts of the lens will accept tint more quickly and become darker, resulting in unevenness of color. A blotch indicates premature release of the lens from the casting mold. Circles are caused by the rubber gasket material having had an insulating effect on the lens while it was being cured, resulting in a looser lattice structure of the outer edge. These areas will tint darker, as they are softer. A partial solution, should you not desire to go back to the lens manufacturer, may be brought about by immersion of the lenses into HOT Neutralizer II™. Or, if you have a diffusion oven, you may essentially "re-cure" the lens by placing it into the oven for about 15-20 minutes at 240°F, (115°C) thus tightening its lattice structure to allow a more even coloring of the lens.

WHITE DOTS: White dots can appear on coated lenses. Add BPI® Spotless™ or BPI® Spotless Pills™ to your tint solution. (Use BPI® Spotless Pearls™ if you are using distilled or de-ionized water).

COLOR VARIATIONS: If you are using tap water, the mineral content may cause color deviations. Also, the chlorine tends to "kill" the red side of the spectrum, resulting in aqua or blue-toned "grays" and olive-toned "browns". It is recommended that de-ionized or distilled water be used, where possible, in lieu of tap water to eliminate this problem. Drawing your water the night before and exposing it to the atmosphere will dissipate the chlorine. If you have inadvertently dripped heat transfer fluid, from the outside of your tint tanks when moving them, the color in which it dripped will be lacking some of the red, causing some of the above described color variations. Also, when washing out your tint tanks prior to mixing a new batch of tint, make sure none of the heat transfer fluid from the outside of the tank is transferred to the inside of it. It is good to rinse tanks under running water for 5-10 minutes after washing them.

PURPLE OVERTONES AND RED FLARES: Check the temperature of the tints first. They should be between 200-210°F. (93.3-98.9°C). Ensure that they are hot enough. When your lenses have a PURPLE overtone, it is generally the result of the tint having been mixed with water for too long. The oxygen content of the water interacts with the tint chemistry causing this purplish appearance. To correct, add yellow tint directly from the bottle (or proportionately more if already diluted). Check your corrections as you go along so you will not add too much yellow. When you have a RED or PINKISH overtone, particularly in dark grays or dark browns, there are several things to be considered.

Do you have a very hard lens? A longer tinting time will be needed, and to avoid picking up too much of the red pigment from gray or brown, make sure the tint solution has enough of the blue to counteract the red.

Are you using the whole bottle? Mixed colors may settle settle in layers, especially after long storage. Be sure to shake well and rinse out each tint bottle until the water runs clear, to obtain the correct shade.

Are you surpassing the color standard? If you are trying for too dark a shade with a tint formulated for lighter shades, the lens will exhibit the red appearance. Make sure the tint is appropriate to the density desired in the finished result. You may obtain better results using colors specifically made for deeper densities with minimal or no red flare at color standard. For sunglass shades in the BROWN family, choose Autumn Brown™ with its gray overtone, Swiss Chocolate™ or Sun Brown™; for GRAYS, BPI® Black™ or Sun Gray™ is preferred. For a darker gray, another solution would be first to immerse the lens to obtain a light blue, then dip into gray. For a darker brown, get a light green, then dip into brown. Alternatively, use BPI® Red Out™ for a one step correction. Dip a gray or brown lens with a red tone into Red Out™ until the desired color is achieved.

PITTED LENSES:

Occasionally, customers have sent lenses to us which show a pitted or bubbled appearance after a tinting or neutralizing procedure. The lenses we have examined show such pits are a weakness of the lens in a small spot, probably caused by either co-polymerization with oil on the surface of the mold, or a spatter of solvent. While such weaknesses are usually nearly invisible, they become apparent because they absorb water and Neutralizer II™ during either repeated neutralizing and tinting, or alternation of BPI® Neutralizer II™, water and/or BPI® Lens Prep II™, or subjection to repeated thermal shock. (Extremes of hot and cold) The solutions are as follows. In general with these lenses, avoid repeated neutralizing at high temperatures; let the lenses cool down slowly and without water, allowing the Neutralizer to remain on them, and, when cooled, wash in water and wipe dry with non-abrasive, lint-free cloth or tissues (such as Mini-Kaydrys™). In extreme cases when no other recourse is available, a lens may be salvaged by neutralizing it completely, letting it cool down with BPI® Neutralizer II™ on it, wiping it when cool and then heating it slowly in an oven to about 250°F. (121°C).

STREAKS: In a tint solution which has not been used for a while, or used less often than others, the pigment may separate from the water, causing a clumping together of tint pigment or agglomerations. Use of BPI® Color Developer™ as directed will help eliminate streaking due to this. Also, periodically heating and stirring your tints when they are not in active use will help keep them properly suspended.

Other causes of streaks:
Heat transfer fluid tint contamination.
Lens holders with accumulated tint residue.
Lens Prep II™ in too high a concentration, resulting in unevenness of color or streaking in the same area after a second coloring of the lens.

TINT TIMING CHART

COLOR	NO ½	NO 1	NO 2	NO 3
GRAY	30 secs	1 min	4 min	8 min
BROWN	30 secs	1 min	4 min	8 min
BLUE	10 secs	30 secs	3 min	7 min
PINK	5 secs	15 secs	2 min	5 min
GREEN	30 secs	1 min	4 min	8 min
YELLOW	30 secs	1 min	5 min	8 min