MYTEX POLYMERS
HIGH PERFORMANCE POLYMERS WORLDWIDE

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Technical Bulletin

"Pinking"

The "pinking" phenomenon observed with many white and pastel colored materials is associated with the antioxidants (AO) used in the substrate for process and thermal stability. All phenolic AO stabilizers will migrate to the surface over a long period of time and undergo color transformation as a result of oxidation. "Pinking" is manifested under the following conditions:

a.) From oxidation of NO_2, SO_2, or other oxidative gases which are by-products of burning of natural gas. It has been shown "pinking" is more prevalent during the winter months in storage areas where gas-fired heaters are used. Other sources (but not limited to) of oxidative gases are propane lift-trucks, welding equipment, and gas lighting. Some low-grades of cardboard can also leach small amounts of SO_2 as well.

b.) When levels of residual catalysts is high. This case is very unlikely with Mytex Polymers TPOs as acid neutralizers are used in our products.

c.) When antagonistic interactions between stabilizers, in the presence of a strong base in the polymer environment. This condition is also rare as formulations are engineered and optimized for minimal negative interaction.

However, this "pinking" effect is *100% reversible*. Upon exposure to intense light (sunlight, bright florescence, etc.), the color species will reverse themselves and the color will return to normal. The time needed to reverse the color transformation is dependent on the light source and proximity (direct, bright sunlight yields results in a few hours). Also, in some instances where the discoloration is minor, the oxidized AO can be wiped off with isopropyl alcohol and a towel. In any case, there is no long-term ill effect on the finished parts.

This temporary discoloration of finished parts can be prevented with careful packaging. By wrapping the parts in plastic bags, which act as a barrier of oxidative gases, is recommended along with limiting the amount of time the parts stay in extended storage.

Finally, if the "pinking" phenomenon is deemed unacceptable by customer and application parameters, materials utilizing specially formulated antioxidants which do not exhibit these color transformations are available.

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