

Light stabilization polycarbonate glazing in automotive

The benefits at a glance

BASF Plastic Additives offers a range of specialized UV absorbers which are suitable for the light stabilization of polycarbonate glazing in automotive.

Tinuvin® 360

- Low volatile benzotriazole UV-absorber providing good processability
- Good weathering resistant
- Suitable for all kind of PC application

Uvinul® 3030

- Low volatile cyanoacrylate UV-absorber providing good processability
- Good weathering resistance
- Quality enabler
 - No inherent color which enables very low initial color and low color development during aging, even at stringent processing conditions

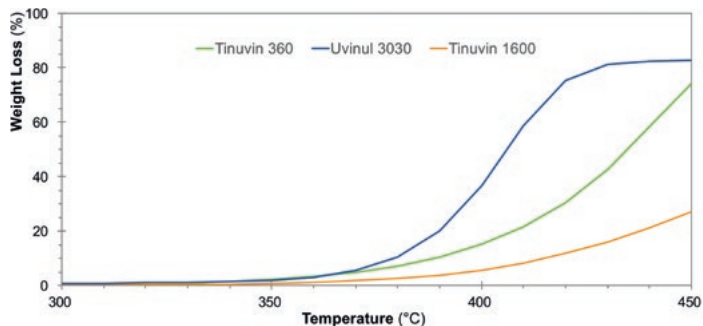
Tinuvin® 1600

- Enables cost optimization in production due to its outstanding processing and throughput properties
 - Extremely low volatile hydroxyphenyl triazine UV-absorber
- Imparts lower concentration during use generating savings
 - Very high extinction coefficient
 - Initial color optimization
- Enables long lasting and extended warranty, not achievable with others UVA technologies
 - Superior weathering performance
 - High thermal stability

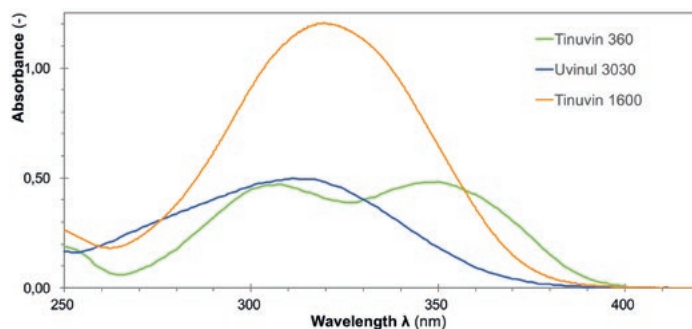
Automotive glazing has emerged as one of the major automotive applications that are expected to gain significant growth opportunities in the arena of lightweight materials. Side windows, rear windows and panoramic roofs are the key application areas for glazing in vehicles. Improved design freedom, improved functionality, superior mechanical properties along with its light-weighting capability has rendered polycarbonate as an ideal material in the glazing market. Polycarbonate compounds have proven to offer up to 50% weight reduction as compared to laminated glass and tempered glass.

All market leaders in polycarbonate glazing applications are working towards grades, that offer superior visibility, long lasting weatherability and impact & abrasion resistance provided by the use of specialized clear coat.

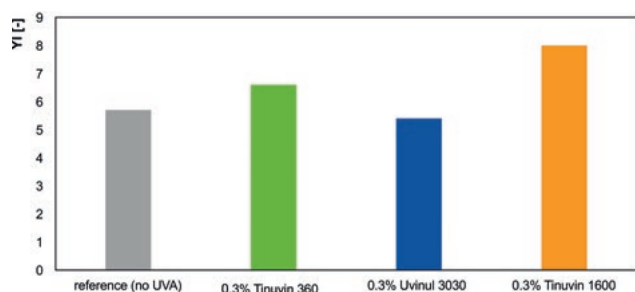
Volatility



Absorption behavior

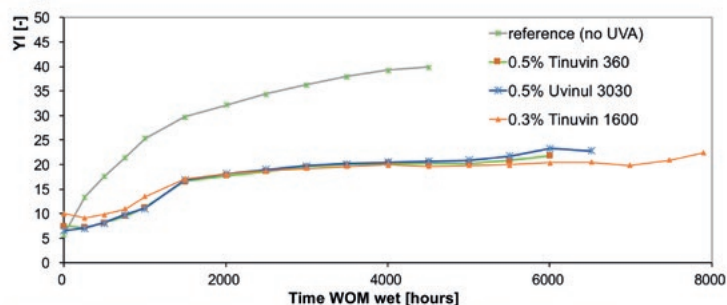


Initial color Polycarbonate A



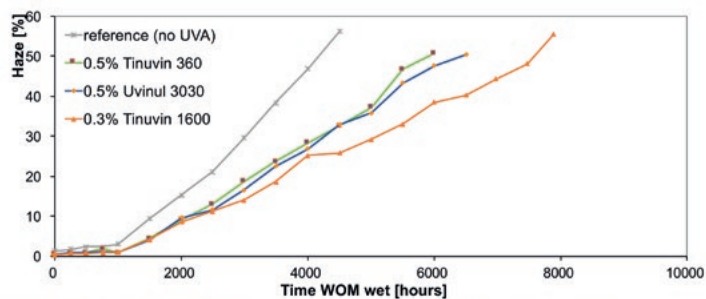
2 mm plaques

Yellowing during weathering – accelerated Polycarbonate B



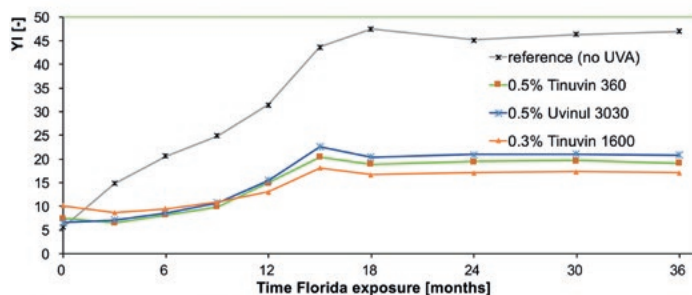
ASTM G 155 Cycle 1: 0.35 W/m² at 340 nm, Bpt: 63 °C, 102 min dry/light, 18 min water spray/light
Injection Molding max 300°C, 2 mm plaques

Haze during weathering – accelerated Polycarbonate B



ASTM G 155 Cycle 1: 0.35 W/m² at 340 nm, Bpt: 63 °C, 102 min dry/light, 18 min water spray/light
Injection Molding max 300°C, 2 mm plaques

Yellowing during weathering – real-life Polycarbonate B



ASTM G147-2009/ASTM G7-2011, Miami (FL, 26°N); direct 45 ° south
Started April 28, 2009, 1 year Florida = ca. 6.3 GJ/m²
Injection Molding max 300°C, 2 mm plaques

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