



Unit 8 Lagrange, Tamworth, Staffs, UK B79 7XD

Tel: +44 (0) 1827 63489

Fax: +44 (0) 1827 51918

E-mail: [info@optical-coatings.com](mailto:info@optical-coatings.com)

Web: [www.optical-coatings.com](http://www.optical-coatings.com)

The Arizona desert colour stability test is designed to test the long term ultraviolet (UV) stability of coatings and products.

Arizona is an internationally recognized benchmark location for outdoor weathering exposures because of its high-intensity sunlight and high year around temperatures. During the summer the air temperature may reach 46°C. A black coloured specimen may reach over 71°C. It is this combination of high levels of UV and extremely high temperatures that makes Arizona the ideal location for testing highly durable materials that may not fail elsewhere.

This extreme climate has been proven especially useful for certain types of testing and materials. For example: mechanical strength loss and physical deterioration of plastics; colour change, fading, and gloss loss; cracking, warping and heat aging of automotive components and signage.

The automotive industry loves plastics for their light weight, impact resistance, transparency, flame resistance and design flexibility. However, plastics are susceptible to three potential shortcomings: degradation when exposed to weather conditions for long periods of time, scratching or marking with little force and susceptibility to chemical and/or solvent attacks. Any of these problems can lead to product failures or consumer complaints. Use of Optical Coating Technologies coatings can overcome these issues and provide a longer lasting protective surface for automotive exterior plastic parts. Additionally, the versatility of plastic part processing provides the industry with design choices that support product differentiation for consumers. Plastics such as polycarbonate (PC) and Acrylic (PMMA) demonstrated these benefits when they were selected to replace glass in headlight and rear lenses.

Silicone based hardcoats potentially provide automotive designers and customers with an added degree of protection for light guides, switches, and exterior and internal trim sported by many of today's cars and trucks. These plastic parts have traditionally been susceptible to fading and cracking after extended exposure to harsh in-use environments. Optical Coating Technologies coatings have enabled many companies to achieve a durable, high-gloss finish, giving a longer lasting protective surface for automotive exterior plastic parts. Our hardcoats help enable the use of plastic without sacrificing durable aesthetics or performance.