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## Weather resistance of acrylics

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ACRYLITE® molding and extrusion compounds are specific members of the class of polymers known as poly(methyl methacrylate) or PMMA. PMMA materials are characterized by their outstanding optical clarity, and resistance to change due to exposure to outdoor weathering. All clear transparent plastic materials are superior to conventional glass in breakage resistance and potential to personal injury if broken. PMMA materials are the most weather resistant of all transparent plastic materials. This is evidenced by the fact that PMMA materials are the materials of choice for use in the lenses of automotive signal lighting devices. While materials of one other type of polymer are sometimes used they cannot meet the weathering requirements without a protective coating to prevent exposure to the ultraviolet rays of ordinary sunlight. The requirements for this application are contained in the SAE J576 standard which requires actual outdoor weathering of materials under specified conditions for three years in Florida and Arizona without any showing "physical changes affecting performance such as color bleeding, delamination, crazing or cracking." Further the luminous transmittance, haze and color may not change more than specified in the standard depending on the specific use and the original color.

We certify that all ACRYLITE® 8, H, and M grades meet the requirements of SAE J576. While we are confident that ACRYLITE® L grades will meet the weathering requirements as well, we have not submitted them for the lengthy and relatively costly testing against this standard because they are not used in automotive signal lighting applications for reasons of their lower heat distortion temperature.

We are confident that ACRYLITE® molding and extrusion compounds will resist the effects of outdoor weathering better than any other class of colorless, transparent polymers.



Also Evonik Cyro warrants its ACRYLITE sheet products made from H series resins for ten years with < 3% transmission loss and Evonik Rohm warrants their Plexiglas sheet products for 30 years with max of 5 to 8 Absolute YI change.

If you have any questions, please call me.

Sincerely yours,

A handwritten signature in black ink that reads 'Robert D. Shiely'.

Robert D. Shiely  
Technical Service Manager  
Performance Polymers