

Designed for use in ABS Systems



Ti-Pure™

R-350 Titanium Dioxide



Chemours™

Ti-Pure™ R-350 titanium dioxide for ABS Systems

Acrylonitrile butadiene styrene (ABS) is a plastic that has added dimensions of performance beyond a single phase polymer. The blending of different polymer phases gives ABS a balance of toughness, mechanical strength, temperature resistance, ease of molding, and a high quality surface finish. The unique blending of ABS polymer phases requires a TiO₂ material that can maintain the balance of performance attributes while adding the dimensions of clean appearance and opacity. The TiO₂ of choice for ABS is Ti-Pure™ R-350.

Ti-Pure™ R-350 offers the unique blend of attributes such as:

- **Brighter, cleaner white for initial color**
- **Excellent thermostability**
- **Excellent UV-stability**
- **Superior mechanical properties**

Ti-Pure™ R-350 rutile titanium dioxide is a bright, white pigment made from our proprietary chloride manufacturing process, designed to create a high purity pigment. It is a dry, fine white powder specifically formulated for the most demanding plastic applications.

With its unique combination of functionalities, Ti-Pure™ R-350 helps retain the mechanical properties ABS applications demand while providing maximum opacity and a brilliant white color. Ti-Pure™ R-350 utilizes an innovative pigment coating technology that results in a titanium dioxide that is as multi-dimensional as the ABS is in its performance!

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for ABS is Ti-Pure™ R-350.

Appearance

A TiO₂ pigment with optimal small particle size gives a preferred blue color (Figure 1). This blue undertone is essential in off-toning yellow colors that commonly contaminant ABS formulations after processing. The Ti-Pure™ R-350 blue undertone ensures the ABS compound has a cleaner, whiter color.

Figure 1: Ti-Pure™ R-350 Initial Color

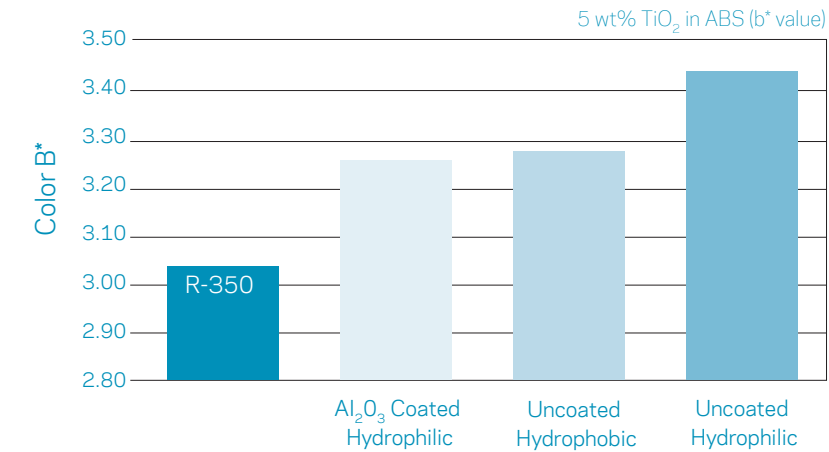
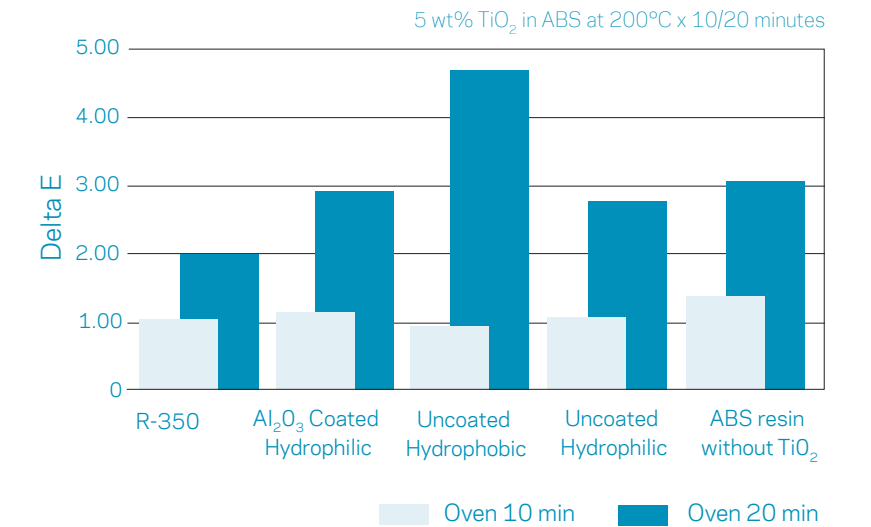


Figure 2: Oven Aging Thermostability



Color Stability for Compounding and Thermoforming Operations

With its innovative coating technology, Ti-Pure™ R-350 minimizes interaction of a TiO₂ surface with the polymer phases in ABS. Ti-Pure™ R-350 demonstrates minimal color formation in an ABS matrix during post-processing thermal exposure (Figure 2).

Additionally, the innovative coating technology for Ti-Pure™ shows minimal interaction with the ABS matrix during thermal processing (Figure 3).

Color Stability For Limited Outdoor Applications

Ti-Pure™ R-350 utilizes an innovative coating that passivates the TiO₂ surface during UV light exposure.

This passivation allows the TiO₂ to be incorporated in polymer articles that are frequently exposed to ultraviolet bombardment without accelerating polymer decomposition. The utility of the innovative coating can be noted in ABS matrices containing UV-stabilizers as well as those without stabilizers. Ti-Pure™ R-350 demonstrates excellent color stability for ABS matrices when exposed under UV stress (Figure 4).

Mechanical Strength For Rigid Applications

The addition of TiO₂ reduces ABS impact strength, sometimes as much as 22%. Ti-Pure™ R-350 helps retain the mechanical properties better than other TiO₂ (Figure 5).

Test conditions:

5 wt% TiO₂ in ABS resin – Xenon exposure after 500 hours under ASTM G155 condition

Figure 3: Injection Molder Dwell Thermostability

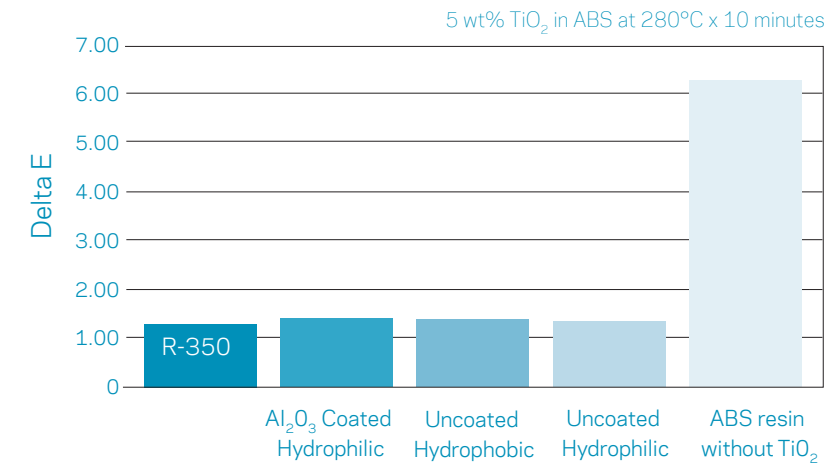


Figure 4: UV Color Stability

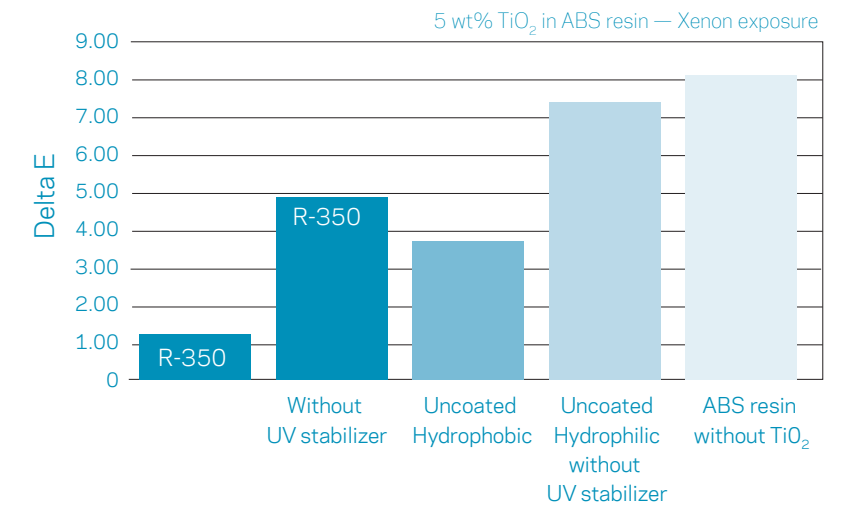
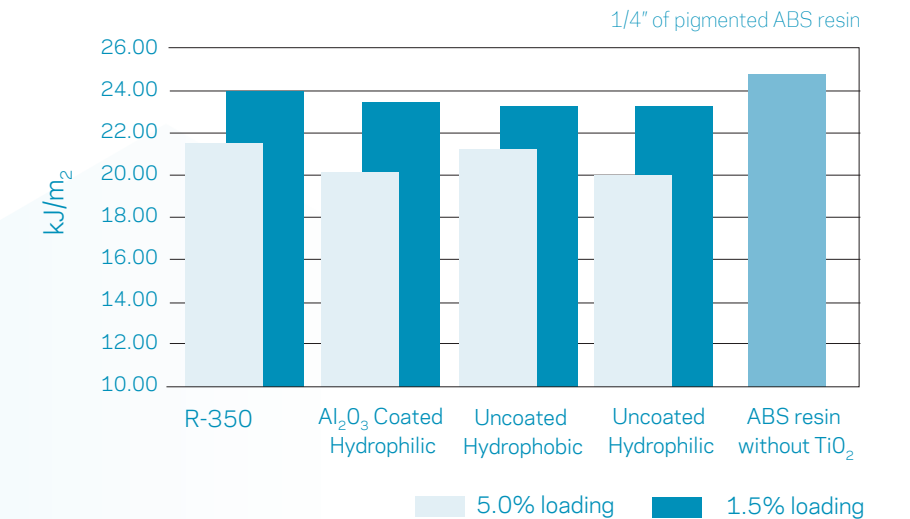
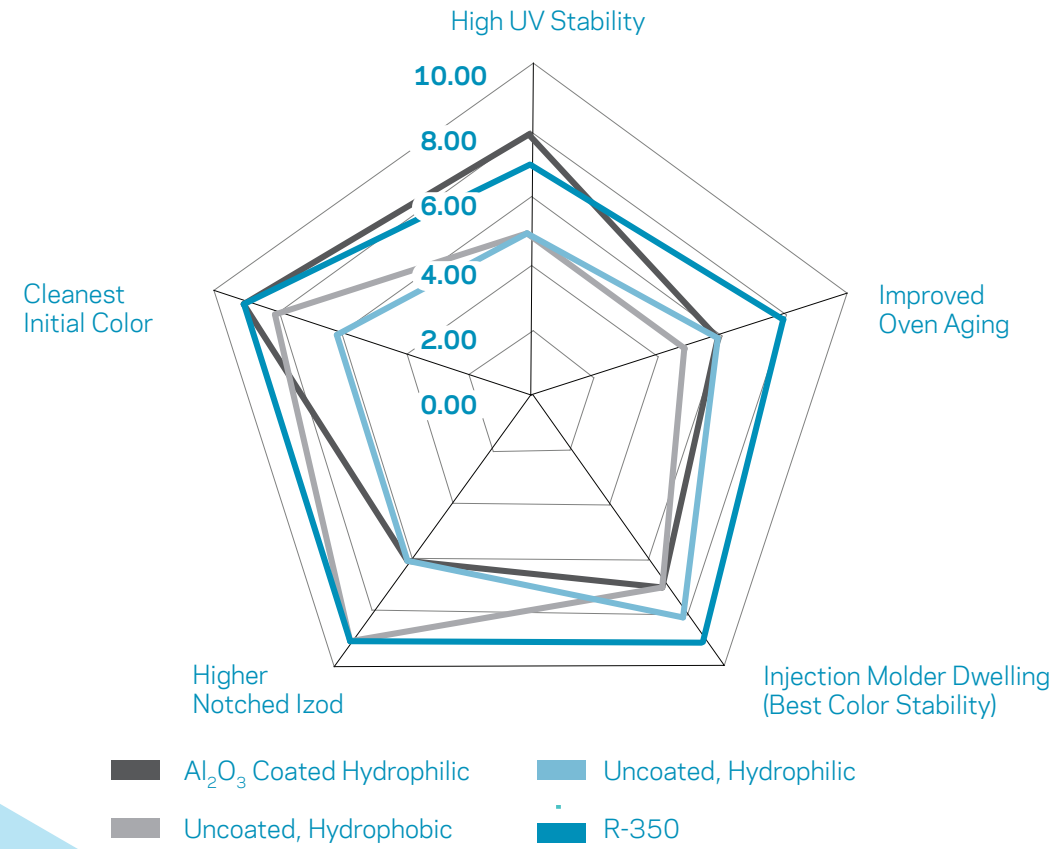


Figure 5: Notched Izod Impact



Ti-Pure™ R-350 provides the optimal blend of performance in ABS

Figure 6: ABS Performance—Summary Data



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Figure 7: Overall performance advantage

	Initial Color	Initial gloss	Long Term Thermo-stability Color	Long Term Thermo-stability Gloss	Indoor Durability Color	Indoor Durability Gloss
TI-PURE™ R-350	Superior	Average	Superior	Superior	Superior	Average
COMPETITOR A	Superior	Average	Limited	Limited	Superior	Superior
COMPETITOR B	Limited	Superior	Superior	Average	Average	Average
COMPETITOR C	Limited	Superior	Average	Superior	Limited	Superior

■ Superior ◻ Average ◻ Limited

Ti-Pure™ R-350 — request your sample today!

Ti-Pure™ R-350 titanium dioxide — is the pigment of choice for ABS applications. Available in 25 kg bags and 1 metric (1000 kg) tonne flexible intermediate bulk containers. If you need additional information or would like to request a sample, please visit our website or contact your local representative.

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For more information or to request a sample, visit tipure.com

To learn more about how you can make a difference with Ti-Pure™, email Lingqing.Peng@chemours.com

For sales and technical support contacts, visit chemours.com/Titanium_Technologies/en_US/sales_support/index.html



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