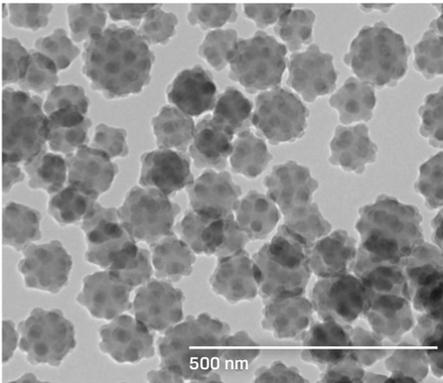


ATLAS™ SILICA COMPOSITE

A Breakthrough Additive for Toners Delivering the Highest Levels of: Durability / Efficiency / Quality



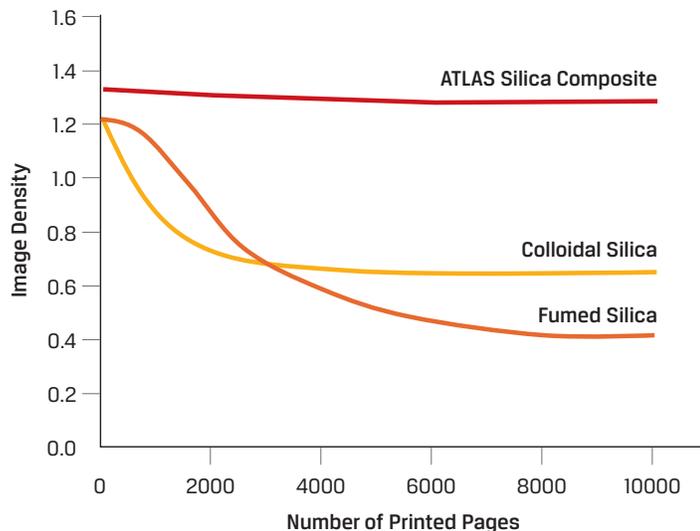
ATLAS silica composite is a breakthrough material for electrophotography applications. It is comprised of hydrophobic silica and polymer in spheroid particles of approximately 100 nm in diameter. ATLAS silica composite delivers performance that is superior to both fumed and colloidal (sol-gel) silicas used as external additive spacers in toners.

Durability: High Performance Over Extended Print Runs

Modern toner formulations are using increasingly softer resins that can be fused at lower temperatures to enable greater energy efficiency, higher speeds, and lower costs. Unfortunately, these new toners are also more susceptible to physical damage during the electrophotography process.

ATLAS silica composite particles act as spacers between toner particles to prevent the embedding of other external additives on the surface of the toner. This spacing effect preserves tribocharge, flow, and overall toner performance during extended print runs when the toner is subjected to physical stress for long periods of time.

The shape and size of ATLAS silica composite particles have been engineered to prevent embedding, migration, and separation from the toner surface. The resulting performance is impressive. When compared to a competitive colloidal silica in a model toner formulation, ATLAS silica composites enable a higher image density from the first print, with little decrease in performance after 10,000 pages—long after print quality deteriorates with other silica additives.



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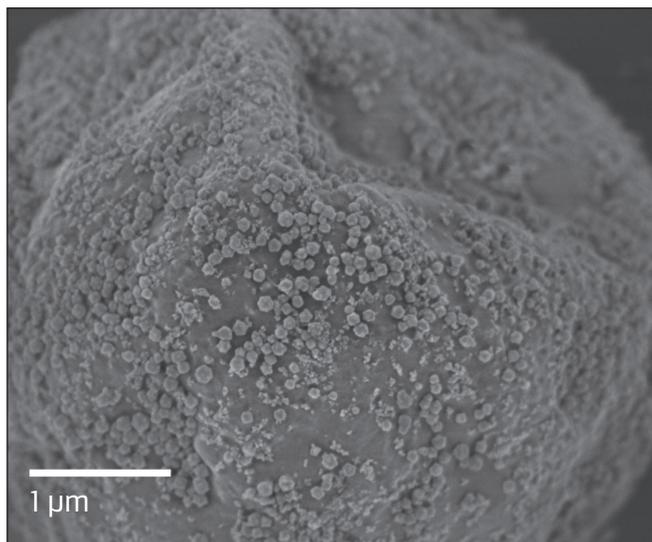
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Efficiency: Lower Loadings, Higher Performance

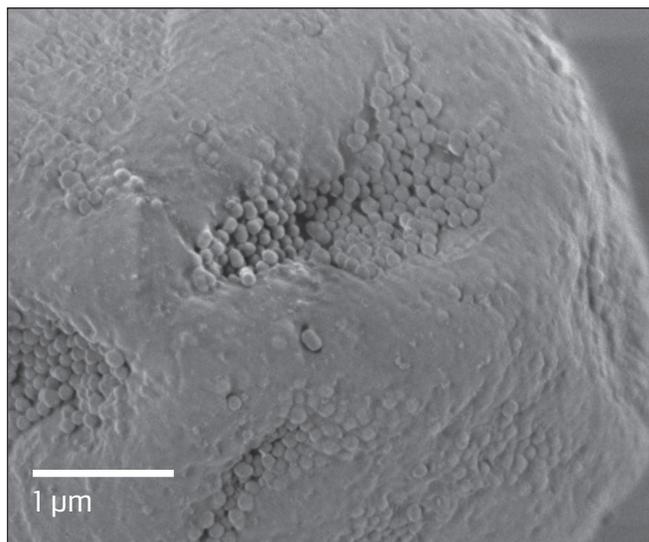
Because of the lightweight polymer used in ATLAS silica composite particles, approximately 25% less mass is required to achieve the same coverage on the toner surface when compared to traditional fumed or colloidal silica. And because ATLAS silica composite particles deliver higher performance than other silicas even at the same surface coverage, formulators can significantly reduce the loading of spacer particles while maintaining or improving performance of the toner.

Quality: Image Consistency and Uniformity

ATLAS silica composite particles feature a relatively uniform size distribution, helping to ensure homogeneous coverage on the surface of the toner particles. Additionally, ATLAS particles tend to stay in place when the toner is physically stressed, as shown in the photos below. This results in a uniform charge distribution and more consistent printed images with fewer print defects.



Toner with **ATLAS** silica composite
after 10,000 page print run



Toner with typical colloidal silica
after 10,000 page print run

For more information or a sample of ATLAS silica composite, please contact your local Cabot representative.

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