

Strengths of Brazilian Kaolin for Paper

IRCC and PPSA Kaolins

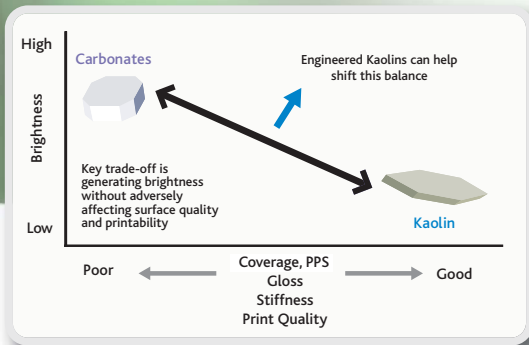
High Performance....Naturally!

Kaolins have been produced at IRCC and PPSA since the mid 1990's and have become firmly established as the high quality products of choice for the global paper market. The principal strengths of these products lie in the raw material itself. "Natural engineering" delivers a combination of high brightness, narrow particle size distribution and low abrasion which cannot be matched sustainably from other global reserves.

Brazilian Kaolins in Coating

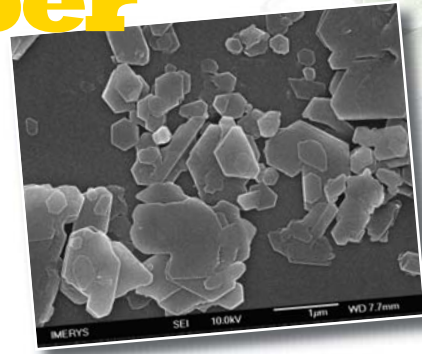
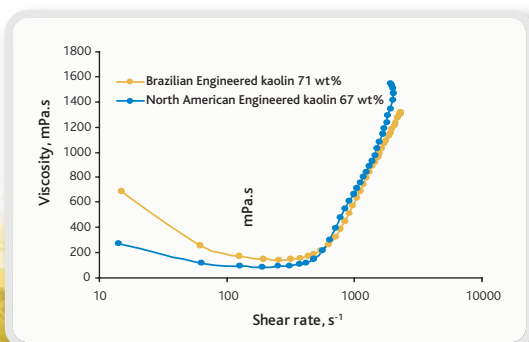
The combination of narrow particle size distribution and high brightness is a feature of all IRCC and PPSA products and helps deliver improved light scatter and optical performance in a wide range of coating applications.

In coating applications the need to balance gloss development with high brightness can often be challenging. Traditionally the kaolin imparts gloss, coverage and printability while carbonate imparts brightness. A key strength of Brazilian engineered grades is the ability to shift this balance delivering improved optical performance for a given level of kaolin in the recipe. This can help papermakers meet the market demands for brightness at higher kaolin levels resulting in improved printability in both offset and rotogravure applications.



Alternatively the optical benefits can be used to reduce costs. For example reducing the amount of optical brightening agent needed and in some geographies, offsetting the need for expensive opacifiers such as Calcined clay and TiO₂.

The rheology of Brazilian kaolins also tends to be superior to that for "engineered" products with similar steepness and shape from other global reserves.



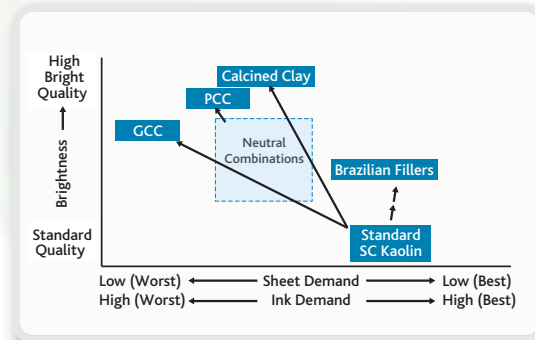
This enables higher pigment slurry solids to be achieved and translates into higher colour solids in coating applications. This can be particularly important for Metered Size Press (MSP) applications where the runnability window at high speeds can be limited. Coating at high solids together with the generation of an open coating structure can also help reduce drying energy.

Brazilian Kaolins in Filling

The combination of a coarse, steep particle size distribution together with high brightness and low abrasion give Brazilian filler grades a unique balance of properties.



The coarse and steep particle size can help machine runnability through improved dewatering, better retention and good paper strength, while the low abrasion is good for wire life. Paper quality can also be improved through the combination of high natural brightness and decreased absorption. Brazilian filler grades are close to 88 ISO brightness whereas many standard kaolin fillers are 83 ISO or lower.



For SC papers, these clays can be used to produce high brightness SC-A+ grades under acid conditions without the compromise in surface properties and ink demand normally seen in neutral papermaking. Alternatively the scatter and brightness benefits can be traded for cost reduction through reduced pulp bleaching. Additionally, Brazilian fillers have a strong technical fit as fillers for LWC base papers where high loadings can be achieved resulting in benefits to surface quality after coating.

Summary

The IRCC- PPSA platform is without doubt the leading production facility globally for sustainable high quality engineered kaolins which deliver unmatched, cost- efficient performance in a wide range of paper making and paper coating applications.