Dispersability

Carbon black dispersability indicates the ease with which the pigment can be wetted with the resin and subsequently de-agglomerated. This performance measure is dependent primarily on the fundamental characteristics of the black pigment. Considering the physics of nano particles, it represents the Van der Waals attractive force needed to separate the agglomerates into discrete carbon black aggregates. This measure is independent of the polymeric system used to disperse the black pigment.

Poor Dispersability  Excellent Dispersability
(partial de-agglomeration) (full de-agglomeration)

The photomicrographs above illustrate how dispersability of the black pigment affects the de-agglomeration and polymer wetting.

Delta P Performance

The graph below shows the 325-mesh delta P performance of BLACK PEARLS 717 compared to BLACK PEARLS 800 and BLACK PEARLS 4840 (correlated test in polypropylene).

The above results confirm that the level of performance of BLACK PEARLS 717 is comparable to BLACK PEARLS 800 and BLACK PEARLS 4840.
BLACK PEARLS 717: A Black Pigment for Molding Applications with Optimum Color Performance

BLACK PEARLS 717 is a black pigment developed by Cabot for molding applications. It belongs to the same family as the well-known industry benchmarks BLACK PEARLS 800, BLACK PEARLS 4840 and BLACK PEARLS 900. BLACK PEARLS 717 complimentarily lies in an excellent combination of color strength and blue tone as well as an optimum masterbatch dilutability.

Like the above-mentioned benchmarks, this black pigment meets a particular performance balance in terms of the five key performance criteria important to the molding application:

- Color strength: a measure of the total visible light absorbed by the pigment in the molded polymer part
- Blue tone: is defined as the undertone of the molded part measured within the CIELAB coordinates, i.e. the b* value
- UV stability: is defined as the exposure time in an Atlas Ci65A accelerated weathering chamber required to reach 50% of the initial elongation at break
- Masterbatch dilutability: the ease with which the pigment is released by the masterbatch carrier resin and is evenly distributed in the dilution resin
- Dispersability: the ease with which the pigment can be wetted with the resin and subsequently de-agglomerated

Cabot researchers have developed a model to predict the UV performance of a black pigmented item. A low relative UV value means that more pigment is available to absorb the incident light and hence reduce the negative impact of UV radiation on polymer resins.

The graph below indicates that the relative UV protection prediction of BLACK PEARLS 717 is expected to be between BLACK PEARLS 800 and BLACK PEARLS 4840.

The star diagram is a visual and accessible way to compare different black pigments on their relative suitability for the molding applications. The opposite star diagram compares the performance of BLACK PEARLS 717 with BLACK PEARLS 800 and BLACK PEARLS 4840 in terms of the five key performance criteria. These performance measures are discussed in more detail in this guide.