



FinaSperse[®] CB 5

Specialty wetting and dispersing additive for carbon black

Carbon black (CB) masterbatches claim significant volumes in market owing to a wide range of applications of carbon black in plastics including flexible packaging (food packaging films, industrial films, lamination, carrier bags, refuse bags, geo-synthetics, agricultural films and building films) along with the rigid packaging, water tank (roto-molding), HDPE pipes, automobiles, numerous more applications.

Three major functionalities of carbon black are

- Colour
- UV-protection
- Antistatic properties

The significant opportunity brings along remarkable challenges pertaining to achieving of high quality dispersion of carbon black owing to diversity in the grades and the associated properties, end-applications, cost concerns and the most crucial – the identification of the suitable dispersing and/or wetting agents for carbon black.

FinaSperse CB 5 is specially designed to work through efficient wetting of Carbon Black, which facilitates the breaking of large primary agglomerates. Preliminary observations confirmed effective wetting of the Carbon Black with FinaSperse CB 5 in comparison with the neat polymer as shown in Figure. The concept of wetting is extremely important as it is a pre-requisite to excellent dispersion of the pigment, in this case Carbon Black. This may also help in achieving higher quality dispersion at lower shear value/processing time i.e. less severe processing conditions.

Carbon black in molten polymer granules



Carbon black aggregates are prominent in polymer phase

Carbon black in molten FinaSperse CB 5



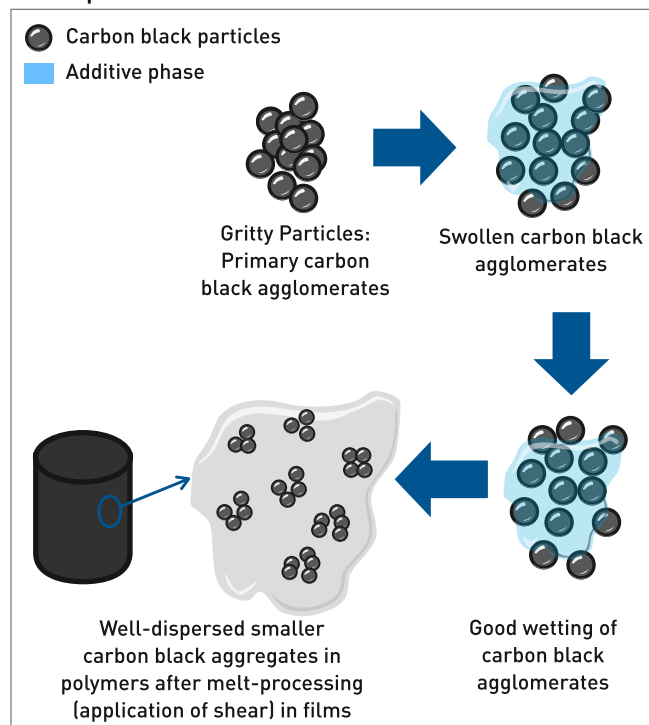
Carbon black aggregates appear swollen, softer and exhibit onset of break-up into smaller agglomerates

FinaSperse CB 5 establishes effective molecular interactions with Carbon Black, thus penetrate the Carbon Black agglomerates resulting in decreased agglomerate strength. These weak agglomerates disperse more uniformly when subjected to shear during processing, resulting in excellent dispersion.

Therefore, FinaSperse CB 5 ensures exceptionally enhanced dispersion of carbon black compared to conventional dispersing additives.

Test	Conventional PE-wax+ Zinc Stearate (5+1)%	FinaSperse CB 5 (5%)
FPV (bar/g), with 10μ screen	18.2	12.9
Tinting strength	100	115.6

Superior dispersion of Carbon Black achieved by FinaSperse CB 5



Advantages offered

- Improved jetness
- Good surface properties/gloss
- Lower specks due to uniform dispersion
- Possibility of increased loading of Carbon Black in masterbatch
- Superior dispersion potentially at less severe processing conditions

Recommended dosage

Up to 5% of FinaSperse CB 5 on total compound weight

Method of use

- FinaSperse CB 5 is dry blended with carbon black and polymer in high-shear mixer followed by pelletization using twin-screw extruder
- Mixing & homogeneous dispersion of polymer/ carbon black/additives using kneader or batch mixer followed by pelletization on single screw extruder

For Further technical assistance, Please contact our Technical Services Department | Email : info@fineorganics.com

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