



# Enable™ performance PE-based masterbatch carrier improves wire and cable performance



Enhanced  
heat shock  
resistance



Improved  
tensile strength



Enhanced  
dispersion



Excellent  
production  
efficiency

## Challenge:

### Develop a masterbatch carrier to enhance wire and cable performance

Existing masterbatch formulations comprise a carrier, typically LLDPE or HDPE, and a coloring pigment such as carbon black. Even though the masterbatch is used in small doses, the carrier used can play a critical role in the strength of the final product.

BeiHuaGaoKe (BHKG) was founded in 2001 and is today a leading masterbatch manufacturer in China, especially in carbon black masterbatch production. Headquartered in Beijing with an office in Shanghai, they have a manufacturing facility in North China. BHKG wanted to improve the performance of its masterbatch products used for wire and cable applications, such as jacketing.

## Solution:

### Performance PE-based masterbatch carriers for enhanced performance

ExxonMobil and BHKG collaborated to test masterbatch carrier solutions that would improve carbon black dispersion and production efficiency, while enhancing final product strength.

ExxonMobil recommended replacing traditional LLDPE/HDPE carriers with our performance polyethylene (PE) polymers. Formulations were developed and tests conducted to examine the mechanical performance of jacketing when using different carriers such as LLDPE and our performance PE products.

## Results:

### Enable™-based masterbatch carrier improves heat shock resistance and tensile strength

When Enable 4009 performance PE is used as a masterbatch carrier, jacketing compounds demonstrated enhanced performance compared to a traditional LLDPE carrier in these areas:

- Enhanced heat shock resistance
- Better carbon black dispersion (40% carbon black wt%)
- Improved tensile strength and elongation
- Excellent production efficiency

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