# Background

Resodyn Acoustic Mixers has developed a novel mixer product line that uses low-frequency, high-intensity sound energy for mixing. The mixer technology, trademarked as ResonantAcoustic® Mixing, is applicable to a broad range of mixing classes that include liquid-gas, liquid-liquid, liquid-solid and powder-powder systems. Highlighted in this bulletin is: **Blending Polyethylene Pellets with Carbon Black**, just one of many applications.

Pellet-Powder Blending

Carbon black powder was blended with polyethylene pellets in a dry state. The image on the right, shows the starting materials in the first and the blended powders is in the second. The third, lower image, shows an enlarged view of the pellets before and after coating. The average size of the pellets was 0.125" and the pre-blend carbon black agglomerates were up to 0.040" in diameter Batch size was 200g of polyethylene and 0.75 g of carbon black.

The materials were blended using the LabRAM® mixer. After only eight seconds of mixing the two materials were thoroughly blended and the pellets were fully coated with carbon black. The final mixture had no dust generation, no agglomerations, and no residual carbon black in the vessel.

The use of RAM™ technology for coating of pellets is efficient and there is no need for adding coating agents such as oils. Mixing in the end container allows for quick batch cycle and no clean up of the mixing equipment.
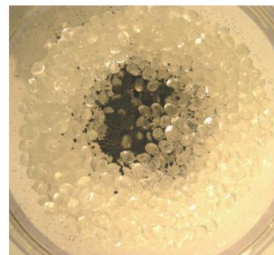
Starting Materials   **After 8 Seconds Mixing**

ResonantAcoustic® Mixer Benefits

- Easy cleaning
- Blends dissimilar powders
- Fast mixing times
- Can mix in the shipping container
- Blends cohesive powders
- Breaks loose agglomerations
- Can mix hazardous materials
- Can combine processing steps such as coating and mixing

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