

Methicone-Treated Blended Iron Oxides

Introduction

Iron oxides (Fe_2O_3 and Fe_3O_4) are magnetic black materials. The methicone treatment adds a degree of “slip” to the particles allowing for better color saturation although they still remain magnetic. The resulting black pigment is predominantly used in cosmetics manufacturing.

Analytical Test Method

RI (particle): $\text{Fe}_2\text{O}_3 = 2.90$ $\text{Fe}_3\text{O}_4 = 2.42$

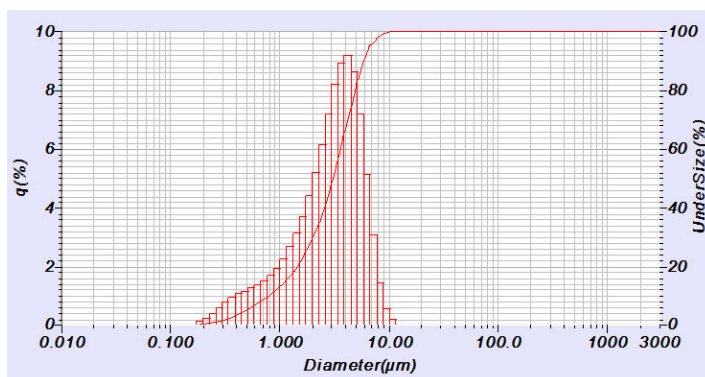
Dispersant fluid: Water with 0.1% sodium pyrophosphate

Sonication: 60 seconds at 300 watts (external) and then on during measurement.

Circulation speed: 5

Agitation speed: Off

Note: To keep the magnetic particles separated as much as possible, the sonication should be kept on during the entire measurement cycle to prevent reagglomeration.



Example data

Median:	3.10 μm
Mean:	3.28 μm
D(10%):	0.81 μm
D(90%):	5.92 μm

Results

The active display of particle size results allows the user to see the rapid reagglomeration of these magnetic particles. The internal, adjustable-power ultrasonic system may be sufficient to disperse the agglomerates and then used at a power setting sufficient to prevent reagglomeration.