

Black Iron Oxide (Magnetite)

Introduction

Magnetite (also known as lodestone) is a naturally occurring magnetic mineral. Magnetite is used in various applications from speaker production and high speed disk drives to a color additive in cement.

Analytical Test Method

RI (particle): 2.42-0.10i

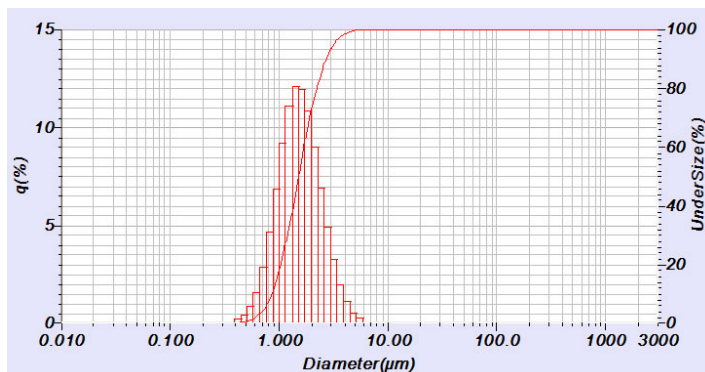
Dispersant fluid: Water with 0.1% sodium pyrophosphate

Sonication: On during measurement

Circulation speed: 3

Agitation speed: 3, continuous

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:	1.52 µm
Mean:	1.69 µm
D(10%):	0.80 µm
D(90%):	2.61 µm

Results

The active display of particle size results allows the user to see the rapid re-agglomeration 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. Due to the high specific gravity (5.1), larger particle sizes will need higher pump speeds to maintain the particles in suspension.