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General handling and storage of organic soluble iron oxide magnetic nanoparticles

This applies to the following iron oxide (IO) magnetic nanoparticles with product catalog number:

SOR –Oleic acid groups on the surface

1. Storage

SOR should be stored at 4-25°C

2. Determination of iron concentration

The iron concentration of iron oxide nanoparticles can be determined spectrophotometrically using the equation below:

Fe concentration (mg/mL)= (OD_{500nm}-OD_{800nm}) x dilution factor /extinction coefficients*

*5 for 15 nm or bigger iron oxide nanocrystals; 4.3 for 10 and 5 nm nanoparticles

For the most accurate measurements, optical density at 500 nm should be around 0.5.

3. Determination of particle amount

Once the Fe concentration is determined, check the following chart for particle amount:

Particle Size (nm)	Nanoparticle Amount (nmol) of 1 mg Fe	Nanoparticle Amount (nmol) of 10 mg Fe	Nanoparticle Amount (nmol) of 50 mg Fe
5	6.9	69	345
10	0.86	8.6	43.0
15	0.27	2.7	13.5
20	0.11	1.1	5.5
25	0.058	0.58	2.9
30	0.034	0.34	1.7
35	0.021	0.21	1.05
40	0.014	0.14	0.7



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45	0.010	0.1	0.5
50	0.0073	0.073	0.365

4. Stability in organic solvents

SOR has been tested for dispersion in chloroform, toluene and THF.

5. Nanoparticle purification

Organic soluble IO nanoparticles in chloroform can be purified by precipitation in the presence of acetone.

YES! We do provide custom nanoparticle synthesis service. For detailed information, please check our website:

<http://oceannanotech.com/nav.php?qid=1>

If you have more questions, please contact us at info@oceannanotech.com.