

Product data sheet

Name of the product: SPIO@SiO₂, suspended in deionised water, 5 mg/mL or powder.

Product number: SP2XX18

Product representation:



Guarantee: 1 year from manufacture, under the specified storage conditions.

Storage: 4 – 25°C. DO NOT FREEZE.

Usage: Ensure the nanoparticles are well dispersed in the medium prior to use.

In **suspension**, shake vigorously before use, bath sonication is strongly recommended.

In **powder**, to use in suspension, bath sonication is needed.

Product specifications:

Property	Unit	Specifications	
Characterization technique		Min.	Max.
Appearance (Black or brown powder)	-	-	-
<i>Visual Inspection</i>			
Magnetic	-	-	-
<i>Test with magnet</i>			
Phase of SPIO (Magnetite)	-	-	-
<i>X-ray Diffraction (DRX)</i>			
Crystallite size of SPIO	nm	10	20
<i>X-ray Diffraction (DRX)</i>			
Mesh parameter	Å	8.370	8.390
<i>X-ray Diffraction (DRX)</i>			
Oxygen stoichiometry	-	0	0.111
<i>X-ray Diffraction (DRX)</i>			
Fe²⁺/Fe³⁺ratio	-	0	50
<i>X-ray Diffraction (DRX)</i>			
Mean size of the silica layer	nm	1	8
<i>Transmission Electron Microscopy (TEM)</i>			
Mean particle size of the SPIO with the silica layer	nm	10	30
<i>Transmission Electron Microscopy (TEM)</i>			
Specific surface area	m ² /g	60	140
<i>BET</i>			
Zeta potential at physiological pH (pH =7,4)	mV	-25	-40
<i>Zetametry</i>			
Mass loss	%	-2	-10
<i>Thermogravimetric analysis (TGA)</i>			