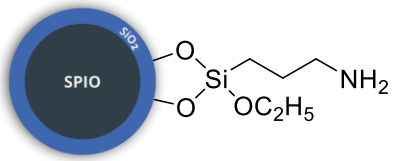
Product data sheet

Name of the product: SPIO@SiO_2-NH_2, suspended in deionised water, 5 mg/mL or powder.

Product number: SP2NH18

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 *Characterization technique*	**Unit**	**Specifications**	
		Min.	Max.
Appearance (Back or brown powder) *Visual Inspection*	-	-	-
Magnetic *Test with magnet*	-	-	-
Presence of the molecule at the surface *Infrared analysis (IR)*	-	-	-
Loading of -NH_2 at the surface of the nanoparticles	Nb*/nm²		
Thermogravimetric analysis (TGA)	Nb*/nm²	3	8
Isoelectric point (pH) Zetametry	pH	8	11
Zeta potential at physiological pH (pH =7,4) *Zetametry*	mV	25	45
Phase of SPIO (Magnetite) *X-ray Diffraction (DRX)*	-	-	-
Crystallite size of SPIO *X-ray Diffraction (DRX)*	nm	10	20
Mesh parameter *X-ray Diffraction (DRX)*	Å	8.370	8.390
Oxygen stoechiometry *X-ray Diffraction (DRX)*	-	0	0.111
Fe^{2+}/Fe^{3+}ratio *X-ray Diffraction (DRX)*	-	0	50
Mean size of the silica layer *Transmission Electron Microscopy (TEM)*	nm	1	8
Mean particle size of the SPIO with the silica layer *Transmission Electron Microscopy (TEM)*	nm	10	30

**Nb = number of molecules*