

## Technical Specification of Iron Oxide Nanocrystals with Positively Charged Surface

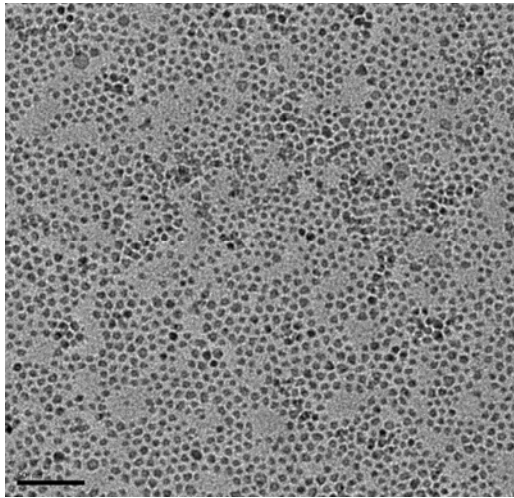
**Description:** SHQ is a group of water soluble iron oxide nanocrystals with amphiphilic polymer and polydiallyldimethylammounium chloride (PDDA) coating. There is no linkable functional group on the surface of the nanocrystals. The zeta potential of SHQ is more than +50mV. The thickness of the total organic layers is about 8 nm. The hydrodynamic size of the nanocrystals is about 14-16 nm larger than their inorganic core size measured by TEM.

SHQ is very stable in tris buffer solution in the pH range of 3-14. Its stability in other buffer solutions has not been fully tested yet. Please contact us if you have any questions.

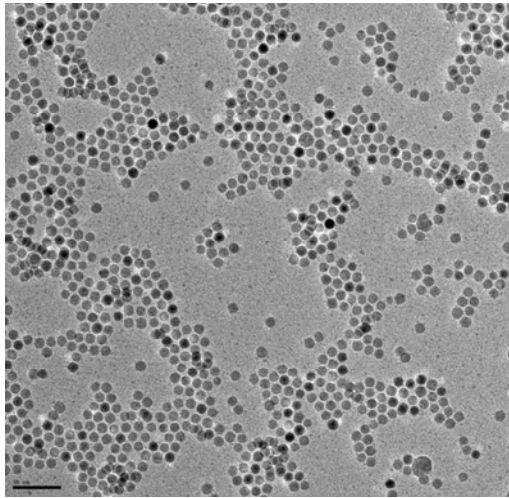
<b>Catalog number:</b>	SHQ
<b>Product name:</b>	Iron oxide nanocrystals in water with positively charged surface.
<b>Solvent:</b>	20 mM tris buffer solution
<b>Storage:</b>	4-25°C; Do not freeze.
<b>pH stability:</b>	2-14
<b>Buffer stability:</b>	Tris
<b>Shelf life:</b>	12 months
<b>Concentration:</b>	1 mg/mL (Fe)

<b>IO size (nm):</b>	10	15	20	25	30
<b>Size tolerance (nm):</b>	2.5	2.5	2.5	2.5	2.5
<b>Size distribution:</b>	<5%	<5%	<5%	<5%	<5%
<b>Molar concentration (uM) of 1 mg/mL (Fe):</b>	0.86	0.25	0.11	0.054	0.031
<b>Structure:</b>	Maghemite	Magnetite			
<b>Chemical Formula:</b>	Fe <sub>2</sub> O <sub>3</sub>	Fe <sub>3</sub> O <sub>4</sub>			

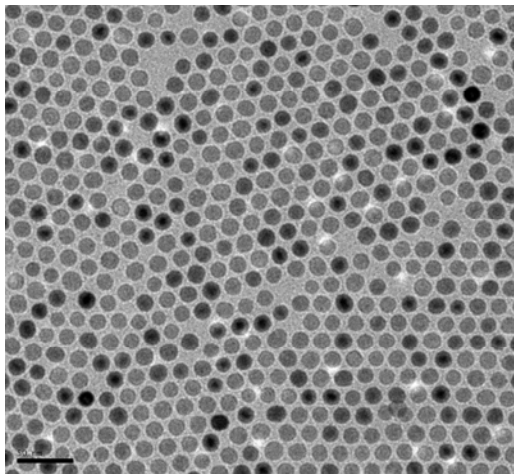
**TEM image of 5 nm IO nanocrystals**



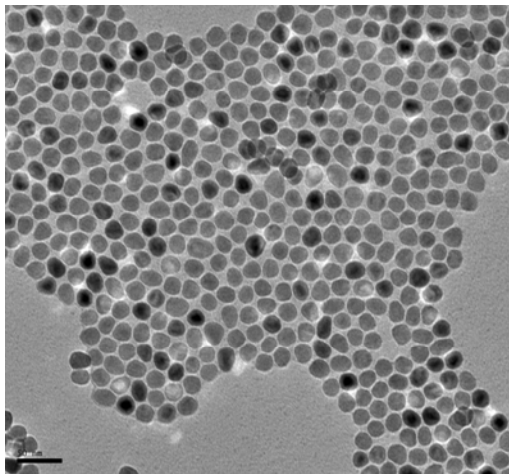
**TEM image of 10 nm IO nanocrystals**



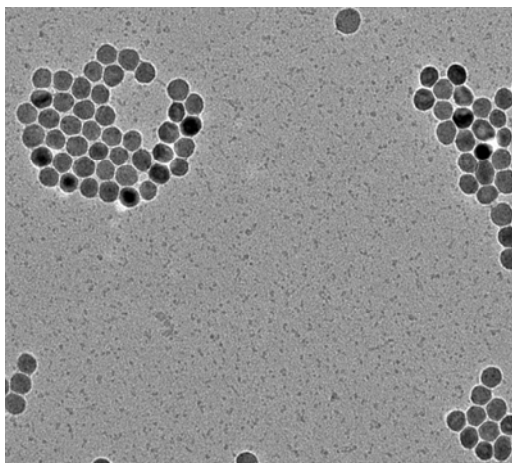
**TEM image of 15 nm IO nanocrystals**



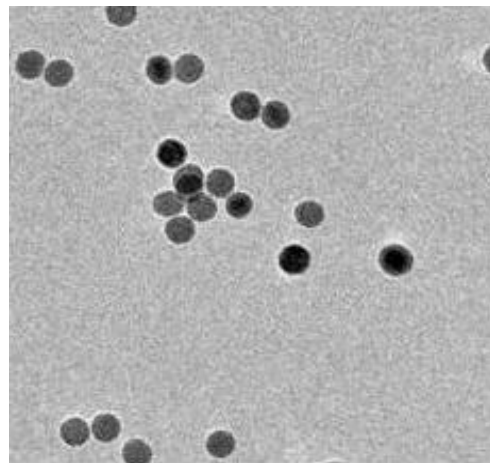
**TEM image of 20 nm IO nanocrystals**



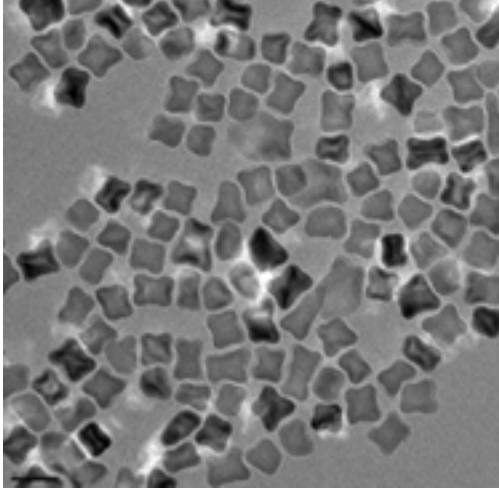
**TEM image of 25 nm IO nanocrystals**



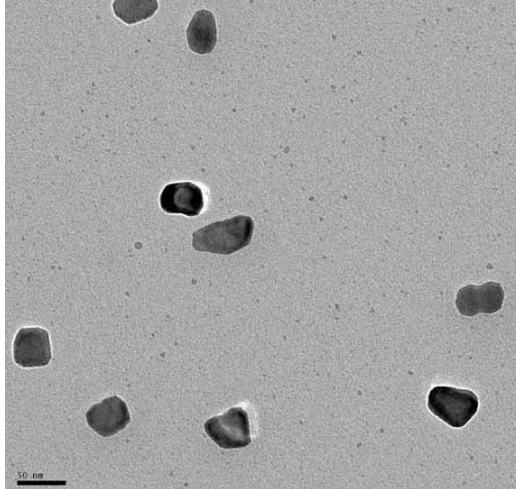
**TEM image of 30 nm IO nanocrystals**



TEM image of 40nm IO nanocrystals



TEM image of 50nm IO nanocrystals



**For R&D only. Not intended for food, drug, household, agricultural, or cosmetic use.**

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