

## Technical Specification of Iron Oxide Nanocrystals with Carboxylic Acid Group

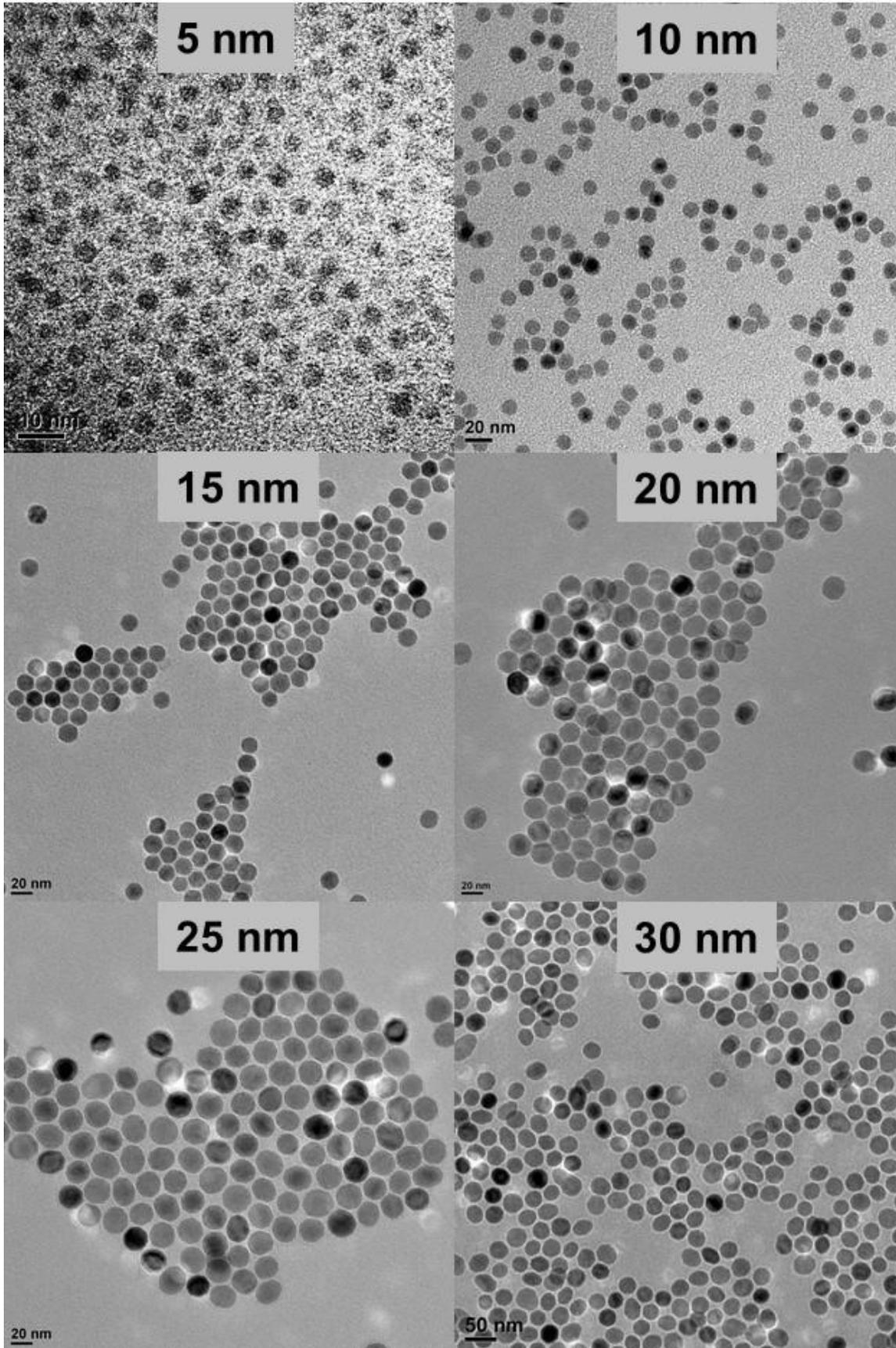
**Description:** SHP is a group of water soluble iron oxide nanocrystals with amphiphilic polymer coating. Their surface functional group is carboxylic acid and their zeta potential is from -30mV to -50mV. Their organic layers consist of a monolayer of oleic acid and a monolayer of amphiphilic polymer. The overall thickness of the organic layers is about 4 nm. The hydrodynamic size of the nanocrystals is about 8-10 nm larger than their inorganic core size measured by TEM.

SHP is very stable in most buffer solutions in the pH range of 4-10. However, it is not stable in MES buffer solution.

SHP can be conjugated to protein, peptide and DNA by following our standard Conjugation Protocol. Ocean NanoTech also offers a SHP-Protein Conjugation Kit which includes all crosslinking agents and buffer solutions. If you need to perform SHP-protein conjugation, we recommend that you remove your original buffer solutions and use our Activation Buffer to disperse your protein for the conjugation. Otherwise, precipitation may occur. If it's your first time to perform this conjugation, you may use BAS as model protein to get familiar with the whole process.

<b>Catalog number:</b>	SHP
<b>Product name:</b>	Iron oxide nanocrystals with carboxylic acid group.
<b>Solvent:</b>	DI H <sub>2</sub> O, 0.02% NaN <sub>3</sub>
<b>Surface group:</b>	Carboxylic acid
<b>Storage:</b>	4-25°C; Do not freeze.
<b>pH stability:</b>	4-10
<b>Buffer stability:</b>	Stable in Borate, Tris, HEPES, PBS. Not stable in MES.
<b>Shelf life:</b>	12 months
<b>Concentration:</b>	5 mg/mL (Fe)

IO size (nm):	5	10	15	20	25	30
<b>Size tolerance (nm):</b>	2.5	2.5	2.5	2.5	2.5	2.5
<b>Size distribution:</b>	≤15%	≤15%	≤15%	≤15%	≤20%	≤20%
<b>Molar concentration (uM) of 5 mg/mL (Fe):</b>	34.5	4.3	1.35	0.55	0.29	0.17
<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>			





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

Ocean NanoTech, LLC shall not be held liable for any damage resulting from handling or contact with the above product.