

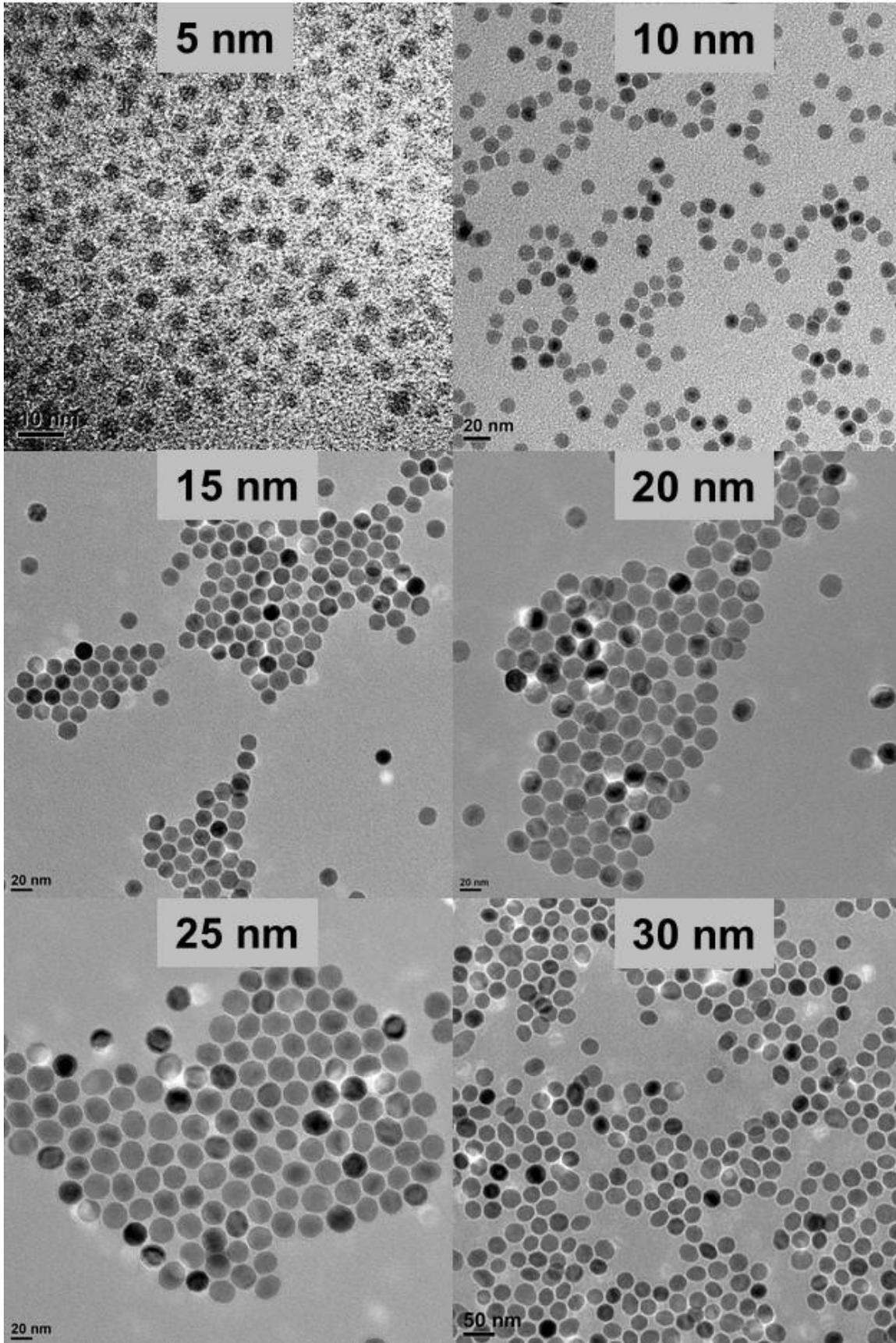
## Technical Specification of Iron Oxide Nanocrystals with Carboxylic Acid Group

**Description:** SYP is a group of water soluble iron oxide nanocrystals with amphiphilic polymer coating in lyophilized powder form. 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.

SYP can be reconstituted in DI water, DMSO, or DMF to any desired concentration less than 10 mg Fe/mL so you can do your conjugation in the solvent system of your choice. Reconstituted SYP in water can be conjugated to protein, peptide and other amine containing molecules.

|                                |  |
|--------------------------------|--|
| <b>Catalog number:</b>         | SYP  |
| <b>Product name:</b>           | Lyof <sup>TM</sup> Iron oxide nanocrystals with carboxylic acid group. |
| <b>Solvent:</b>                | Brown or black powder  |
| <b>Surface group:</b>          | Carboxylic acid  |
| <b>Storage:</b>                | 4-25°C   |
| <b>pH stability:</b>           | 4-10   |
| <b>Buffer stability:</b>       | Stable in Borate, Tris, HEPES, PBS, MES.                               |
| <b>Reconstitution solvents</b> | DI water, DMSO, DMF  |
| <b>Shelf life:</b>             | 12 months  |
| <b>Concentration:</b>          | 1 % in Lyophilized powder  |

|  |                                |      |                                |      |      |      |
|--|--------------------------------|------|--------------------------------|------|------|------|
| <b>IO size (nm):</b>                             | 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.