



40 nm Colloidal Gold Spheres Certificate of Analysis

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Lot #: 20210811

Product #: AU2014

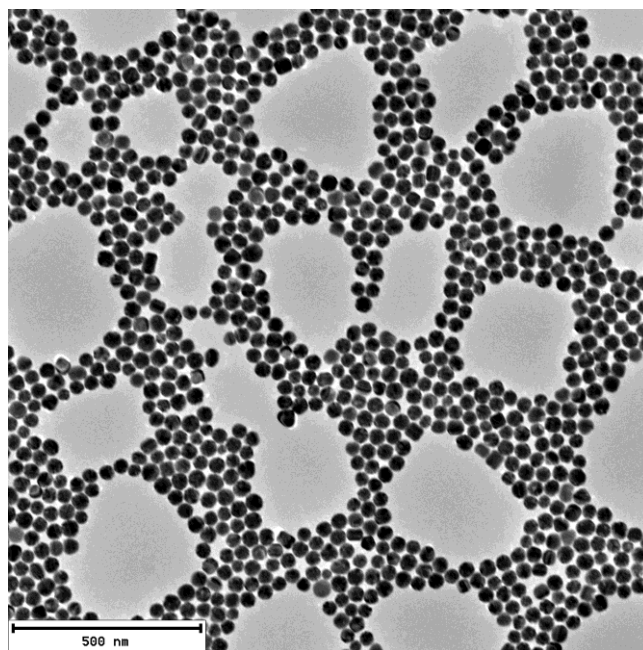
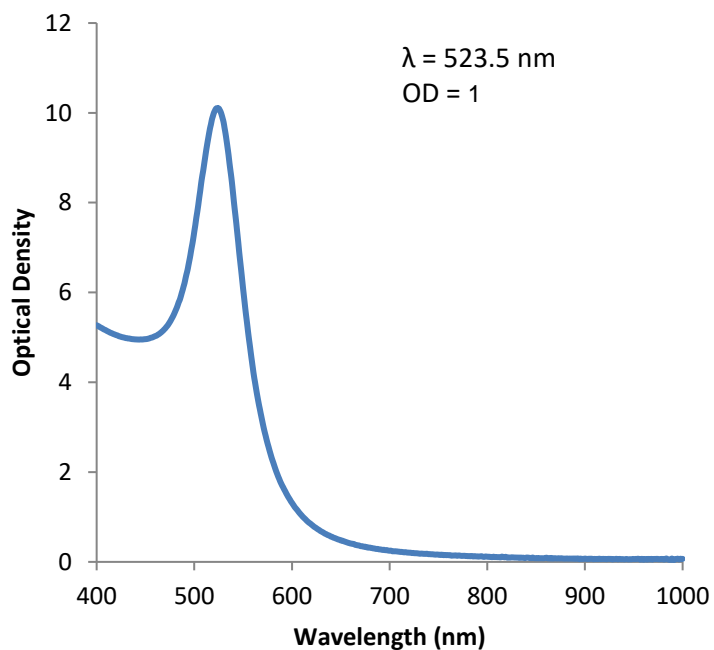
	Product Specs	Lot-Specific		Product Specs	Lot-Specific
Diameter:	40.0 ± 2.5 nm	44 nm	Mass Concentration (Au):	0.37 – 0.42 mg/mL	0.38 mg/mL
Standard Deviation:	< ±4.0 nm	±3.0 nm	Particle Concentration:	5.2 – 7.3 × 10 ¹⁰ per mL	6.1 × 10 ¹⁰ per mL
%CV*:	< 10%	7.5%	pH:	7.0 – 8.5	7.5
SPR** Peak:	523.5 nm ± 1 nm	525.0 nm	Particle Surface:	Citrate	
Optical Density:	1	1	Zeta Potential:	-45.5 ± 20 mV	-43.6 mV
Molarity:	0.8 – 1.2 nM	1.0 nM	Solvent:	2 mM Citrate in DIUF***	

* %CV = coefficient of variation (standard deviation ÷ diameter × 100)

** SPR = surface plasmon resonance

*** DIUF = deionized and ultrafiltrated water (18.2 MΩ-cm)

Extinction Spectrum



Suggested Storage and Handling Procedures

Store at 2-8 °C away from light. Storage at low temperature increases shelf life and stability of the nanoparticles, preventing changes in shape and/or size.

DO NOT FREEZE. Freezing will induce irreversible aggregation of particles and destroy the product.

Bring to room temperature and shake well before each use. Particles may settle to the bottom over time. Shake vigorously for 30 seconds to ensure particles are fully dispersed before use. Visually inspect to ensure all product has redispersed. If particulates or plating remain, sonicate for 1 minute, shake, and repeat as necessary. To minimize heating, do not sonicate for periods longer than 1 minute.

Dilution. We suggest diluting the particles with 2 mM sodium citrate for optimal stability. To make 2 mM sodium citrate, dissolve 5.88 g of sodium citrate dihydrate in 10 L of high purity water (we suggest using DIUF).

Quality Control. If there are visible particulates or a change in the color or intensity of the dispersion, the nanoparticles may have aggregated. Filter the solution using a $\leq 0.45 \mu\text{m}$ polyvinylidene fluoride filter and save the filtered product. Check quality with spectrophotometry and electron microscopy.