

# NANOPARTz™

The gold nanoparticle for nanotechnology

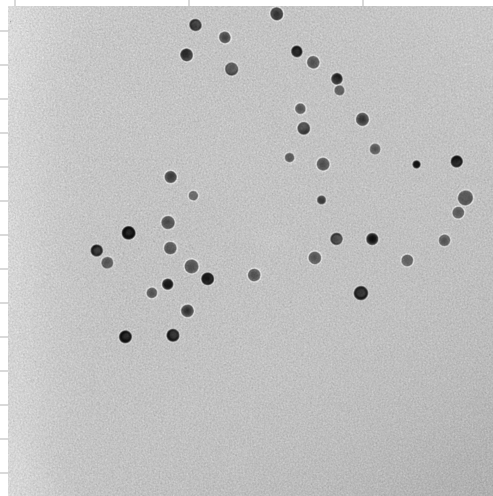
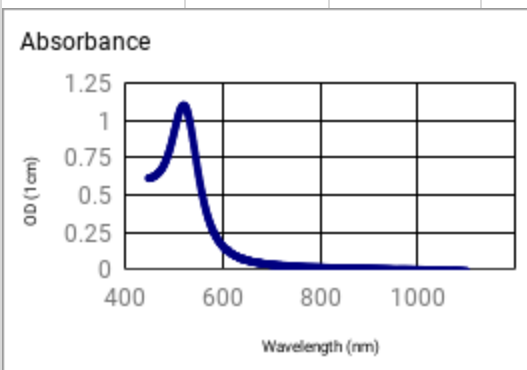
## Certificate of Analysis

|                |                                       |
|----------------|---------------------------------------|
| Product Family | Accurate Spherical Gold Nanoparticles |
| Product Number | A11-45-NPC-DIH-Bulk                   |
| Lot #          | 111G69                                |
| Form           | Gold Colloid                          |
| Capping Agent  | Nanopartz Carboxylic Acid             |
| Solution       | 18MEG DI Water                        |
| Source         | 111G69                                |

|                |             |                  |            |          |
|----------------|-------------|------------------|------------|----------|
| Diameter       | nm          | measured average | TEM, UVVIS | 45       |
| SPR Abs        | OD          | measured         | UV/VIS     | 1        |
| PDI            | stddev/size | measured         | TEM        | 10%      |
| SPR Peak       | nm          | measured         | UV/VIS     | 527      |
| pH             |             | measured         | Orion      | 7        |
| Zeta Potential | mV          | measured         | DLS        | -37      |
| Concentration  | nps/mL      | calc             |            | 5.45E+10 |
| Wt. conc.      | mg/mL       | calc             |            | 0.05     |
| ppm            |             | calc             |            | 50       |
| Wt. %          | %           | calc             |            | 0.0050%  |
| Molarity       | uM          | calc             |            | 9.08E-05 |
| Molar Ext.     | M-1cm-1     | calc             |            | 1.10E+10 |

Date 8/20/2018  
Exp Date 2/16/2019

Alex Schoen, Manager  
Quality Control



111069.jpg  
Cal: 0.422577 nm/pix  
12:59:13 PM 12/26/2016

100 nm  
HV:120.0kV  
Direct Mag: 150000x