

## Attributes of Silver Particles and Solutions

### Single Silver Atom

Radius (nm)	Volume (nm <sup>3</sup> )
0.144	0.01250765

### Silver Particles

Diameter (nm)	Particle Volume (nm <sup>3</sup> )	For Cubic Close Pack Volume – 26% (nm <sup>3</sup> )	Number of Atoms Per Particle	Surface Area of Single Particle (nm <sup>2</sup> )	Particle Mass (grams)
1	0.5236	0.3875	31	3.14	5.558E-21
5	65.4498	48.4328	3872	78.54	6.947E-19
10	523.5983	387.4628	30978	314.16	5.558E-18
15	1767.1444	1307.6868	104551	706.86	1.876E-17
20	4188.7867	3099.7021	247825	1256.64	4.446E-17
25	8181.2240	6054.1057	484032	1963.49	8.684E-17
30	14137.1550	10461.4947	836408	2827.43	1.501E-16
35	22449.2785	16612.4661	1328184	3848.45	2.383E-16
40	33510.2933	24797.6171	1982596	5026.54	3.557E-16
45	47712.8981	35307.5446	2822876	6361.72	5.064E-16
50	65449.7917	48432.8458	3872258	7853.98	6.947E-16
55	87113.6727	64464.1178	5153975	9503.31	9.246E-16
60	113097.2400	83691.9576	6691262	11309.72	1.200E-15
65	143793.1923	106406.9623	8507351	13273.22	1.526E-15
70	179594.2283	132899.7290	10625476	15393.79	1.906E-15
75	220893.0469	163460.8547	13068870	17671.44	2.345E-15
80	268082.3467	198380.9365	15860768	20106.18	2.845E-15
85	321554.8265	237950.5716	19024403	22697.99	3.413E-15
90	381703.1850	282460.3569	22583008	25446.88	4.051E-15
95	448920.1210	332200.8896	26559817	28352.85	4.765E-15
100	523598.3333	387462.7667	30978063	31415.90	5.558E-15

## Concentration of Silver Solutions

ppm	Concentration (g/L)	Concentration (moles/L)
1	1.0000E-03	9.2593E-06
2	2.0000E-03	1.8519E-05
3	3.0000E-03	2.7778E-05
4	4.0000E-03	3.7037E-05
5	5.0000E-03	4.6296E-05
6	6.0000E-03	5.5556E-05
7	7.0000E-03	6.4815E-05
8	8.0000E-03	7.4074E-05
9	9.0000E-03	8.3333E-05
10	1.0000E-02	9.2593E-05
11	1.1000E-02	1.0185E-04
12	1.2000E-02	1.1111E-04
13	1.3000E-02	1.2037E-04
14	1.4000E-02	1.2963E-04
15	1.5000E-02	1.3889E-04
16	1.6000E-02	1.4815E-04
17	1.7000E-02	1.5741E-04
18	1.8000E-02	1.6667E-04
19	1.9000E-02	1.7593E-04
20	2.0000E-02	1.8519E-04