

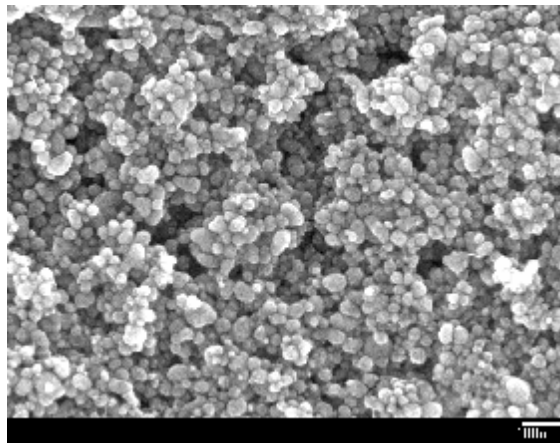
# NanoGrain<sup>®</sup> Ag: silver nanoparticles

Patent pending

## General description

The silver nanoparticles are offered either as dispersions in water (concentration up to 20wt%) or as dispersions in IPA (concentration up to 50wt%).

## Typical properties



**Average particle size (SEM)** : 20 nm ±10 nm

**Particle crystal structure (XRD)**  
Cubic phase

**Inorganic content**  
All inorganic elements less than 0.5 wt%

**Organic content (water based dispersions only)**

Losses at 550°C (TGA)	:	4.0 %
Carbon & Oxygen (LECO analysis)	:	
Carbon	:	1.5 %
Oxygen	:	2.5 %

**Sintering temperature** : ≤ 150°C

**Typical conductivity \*** : 10-20 μΩcm

\*: for water based dispersions with a 10 wt% silver load. Deposited silver film (surface area: 50 mm x 5 mm, thickness: 1 μm) sintered at 150°C for 15 min. Conductivity measured on glass.

Disclaimer: The NanoGrain<sup>®</sup> Ag products are referred to their current status of 'product in, or under, development'. No warranty, expressed or implied, is given as to its accuracy, timelessness, completeness, merchantability or fitness for any other purpose than the purpose for which it is addressed, or for any particular purpose that the recipient may have.