

## Identification of the substance: Nanoparticles of silver

<b>Substance name</b>	Nanoparticles of silver
<b>EC</b>	231-131-3
<b>CAS</b>	7440-22-4
<b>IUPAC</b>	Silver (1+)
<b>Molecular formula</b>	Ag
<b>Forms in the market</b>	Powder hydrophobic; powder hydrophilic, colloidal solution in water

## Physical and chemical properties

<b>Shape</b>	Triangular nano prisms; Nanotubes; Compact
<b>Size (nm)</b>	1; 20; 35; 50; 100

## Toxicological information

<b>Inhalation acute toxicity</b>	LC50 = 3.1x10 <sup>6</sup> particles/cm <sup>3</sup>
<b>Dermal acute toxicity</b>	LD50 = >2000 mg/kg dw (Nontoxic)
<b>Oral acute toxicity</b>	LD50 = >2000 mg/kg dw (Nontoxic) LD50 = >5000 mg/kg dw (Nontoxic) Nontoxic
<b>Genotoxicity</b>	Nontoxic
<b>Cytotoxicity</b>	No data

## Ecotoxicological information

<b>Freshwater Acute toxicity (Daphnia)</b>	EC50 = 48.10 µg/L (Extremely toxic) EC50 = 0.187 mg/L (Very toxic) EC50 = 3844.1 µg/L (Toxic)
<b>Freshwater Acute toxicity (Alga)</b>	EC50 = 2.56 mg/L (Toxic) Toxic
<b>Freshwater Acute toxicity (Fish)</b>	LC50 = 9.4 mg/L (Toxic) LC50 = 250 mg/L
<b>Soil invertebrates (worms)</b>	No data
<b>BAF-Bioaccumulation</b>	No data

## Application

<b>Industrial uses</b>	Additives
<b>Improved properties</b>	Antibacterial properties Antimicrobial properties Thermal stability Power conversion efficiency
<b>Polymeric matrix</b>	Polyester (PS), polyethylene (PE), polyurethane (PU), polysulfide (PSU), nylon, silicone, polyimide (PI), polyether ether ketone (PEEK), polytetrafluoroethylene (PTFE), and polycarbonate (PC)