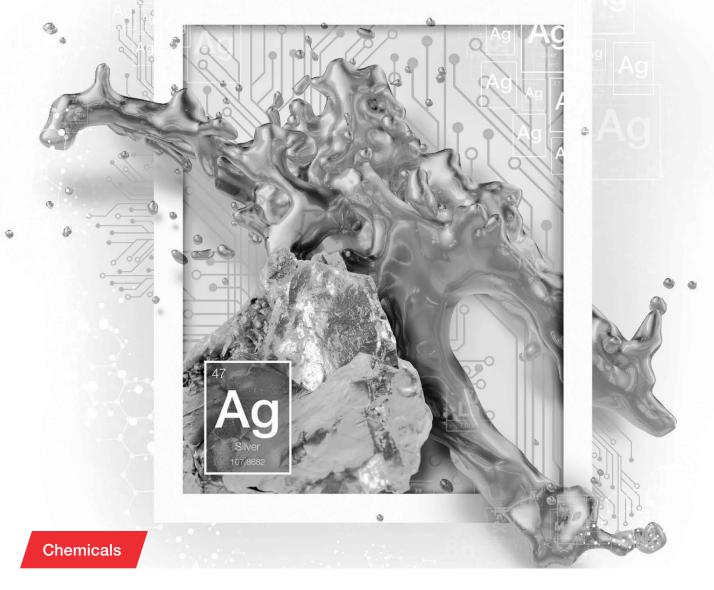
### thermo scientific



# Thermo Scientific silver products

an exceptional precious metal



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## Thermo Scientific silver products

Silver truly packs a punch given its unique combination of intrinsic antimicrobial properties, high electric conductivity and ductility. This combined with the commitment to quality and delivery means the Thermo Scientific<sup>™</sup> portfolio of silver products have been used extensively in a wide range of applicationsfrom medical and pharmaceutical to catalysis, energy and advanced optoelectronics that touch everyday life.

Our specialized silver compounds are available in catalog sizes to bulk quantities. We offer the capability to produce batch sizes up to 200 kg. Bulk packing sizes are customized to meet our customers' requirements.

#### **Key Features**

- Large selection of silver compounds can be manufactured up to a purity of 99.999%.
- Most other silver products are manufactured to 99.9% purity as standard.
- A batch specific certificate of analysis is produced for each product.
- Each silver product batch has:
  - Full metallic impurities typically measured by ICP-MS to ppm
  - Measured silver content
- Specialized silver compounds outside our catalog range can be manufactured on request.



#### **Application highlights**

#### Chemical

Many silver salts are the chemical precursors for other silver derivatives or metallic silver. Silver carbonate has been employed in the Koenigs-Knorr reaction, a substitution reaction of a glycosyl halide with an alcohol to give a glycoside.

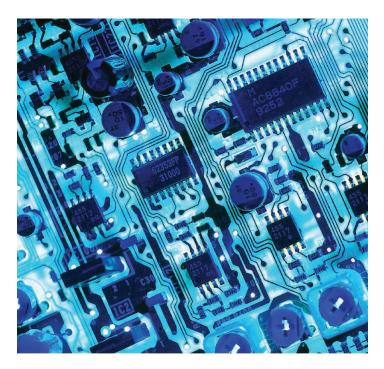
Silver salts of carboxylic acids are used to produce organic halides (Hunsdiecker reaction). Silver products also play a critical role in the catalysis of chemical manufacturing processes that provide the building blocks for many day-to-day products.

#### **Pharmaceutical**

The medicinal properties of silver salts have been used in a range of pharmaceutical compositions. Silver staining is a key application in histology for studying proteins and nucleic acids.

#### Medical and medical devices

Silver and silver salts have been used extensively throughout history for a variety of medical purposes. Silver in many forms including silver sulfate, silver acetate, silver nitrate and nano silver are used in sterile dressings, wound treatment, surgical instruments and medical device applications.





#### Water purification and treatment

Whether for filtration or industrial applications, such as pools, silver products are used to prevent bacterial build up and disinfect water.

#### Energy

From photovoltaics and fuel cells to silver zinc and silver oxide batteries used in small devices and wearables to large scale missile applications, silver products provide high energy density and greener options.

#### **Electronics**

Silver products are superior for bondability, solderability and are corrosion resistant. Given their durability and high conductivity silver products are used in electrical contacts and printable electronics for mobile devices, automotive and displays.

#### Electrodes for potentiometric measurement

For potentiometric measurement, silver/silver chloride electrodes are used as a matter of choice.

### Thermo Scientific silver products

The Thermo Scientific portfolio includes an extensive range of specialized silver products, with over 70 products available and the capability to produce large batch sizes. Below is a listing of some of our products. The full product listing is available online.

#### **Pure Silver products**

Fisher Scientific Cat. No.	Description	Size
AA40511	Silver casting grain, 1.6-6.35mm (0.063-0.25in), 99.9% (metals basis)	25 g, 100 g, 250 g
AA42469	Silver conductive adhesive paste	15 g
AA44075	Silver conductive adhesive paste	50 g
AA12190	Silver foil, 0.025mm (0.001in) thick, annealed, 99.95% (metals basis)	150 × 150 mm, 150 × 600 mm
AA00501	Silver foil, 0.075mm (0.003in) thick, hard, 99.95% (metals basis)	25 × 150 mm, 150 × 150 mm
AA11440	Silver foil, 0.127mm (0.005in) thick, annealed, 99.9% (metals basis)	50 × 50 mm, 100 × 100 mm, 200 × 200 mm
AA42317	Silver foil, 0.1mm (0.004in) thick, annealed, Premion <sup>™</sup> , 99.998% (metals basis)	50 × 50 mm, 100 × 100 mm, 100 × 500 mm
AA40935	Silver gauze, 50 mesh woven from 0.0764mm (0.003in) dia wire	75 × 75 mm, 150 × 150mm, 300 × 300 mm
AA40936	Silver gauze, 80 mesh woven from 0.115mm (0.0045in) dia wire, 99.9% (metals basis)	25 × 25 mm, 75 x 75 mm, 150 × 150 mm, 300 × 300 mm
AA39697	Silver needles, 99.999% (metals basis)	10 g, 50 g
AA00690	Silver powder, -100 mesh, 99.95% (metals basis)	25 g, 100 g
AA11402	Silver powder, APS 4-7 micron, 99.9% (metals basis)	10, 50 g, 250 g
AA00678	Silver powder, spherical, -325 mesh, 99.9% (metals basis)	10 g, 50 g
AA11436	Silver shot, 1-5mm (0.04-0.2in), 99.9% (metals basis)	10 g, 50 g, 250 g
AA12186	Silver shot, 1-5mm (0.04-0.2in), Premion <sup>™</sup> , 99.99% (metals basis)	10 g, 50 g, 250 g
AA11357	Silver shot, 1-7mm (0.04-0.1in), Premion <sup>™</sup> , 99.999% (metals basis)	10, 50 g, 250 g
AA14153	Silver shot, 2-3mm (0.08-0.12in), Premion <sup>™</sup> , 99.999% (metals basis)	10, 50 g, 250 g
AA14259	Silver tubing, 6.35mm (0.25in) OD, 4.35mm (0.171in) ID, 99.9% (metals basis)	10 cm, 50 cm, 4 × 50 cm
AA41454	Silver wire, 0.127mm (0.005in) dia, hard, 99.9% (metals basis)	25 m, 100 m
AA12187	Silver wire, 0.25mm (0.01in) dia, annealed, 99.9% (metals basis)	25 m, 100 m, 500 m
AA11433	Silver wire, 0.5mm (0.02in) dia, 1/2 hard, 99.9% (metals basis)	2 m, 10 m, 50 m
AA41390	Silver wire, 0.5mm (0.02in) dia, annealed, 99.9% (metals basis)	2 m, 10 m, 50 m
AA11469	Silver wire, 0.5mm (0.02in) dia, Premion™, 99.9985% (metals basis)	1 m, 5 m, 25 m
AA11434	Silver wire, 1.0mm (0.04in) dia, annealed, 99.9% (metals basis)	1 m, 5 m, 25 m
AA11466	Silver wire, 1.0mm (0.04in) dia, Premion™, 99.999% (metals basis)	50 cm, 2.5 m, 10 m
AA11435	Silver wire, 2.0mm (0.08in) dia, annealed, 99.9% (metals basis)	50 cm, 2.5 m, 10 m
AA11465	Silver wire, 2.0mm (0.08in) dia, Premion <sup>™</sup> , 99.999% (metals basis)	25 cm, 100 cm, 500 cm
AA42860	Silver wool, 99.9+% (metals basis)	1 g, 5 g, 25 g

Full product listing is available online.

#### Silver compounds

Fisher Scientific Cat. No.	Description	Size
AA11660	Silver acetate, anhydrous, 99%	25 g, 100 g
AA46784	Silver bis(trifluoromethylsulfonyl)imide	250 mg, 1 g, 5 g
AA11420	Silver carbonate, 99.5% (metals basis)	25 g, 100 g
AA11421	Silver chloride, 99.9% (metals basis)	25 g, 100 g, 500 g
AA10857	Silver chloride, Premion <sup>™</sup> , 99.997% (metals basis)	5 g, 25 g, 100 g
AA11538	Silver hexafluoroantimonate, 99%	1 g, 5 g, 25g
AA11873	Silver hexafluorophosphate, 98%	1g , 5 g, 25 g
AA11419	Silver iodide, 99.9% (metals basis)	25 g, 100 g
AA20835	Silver lactate	10 g, 50 g
AA45509	Silver nanopowder, APS 20-40nm, 99.9% (metals basis)	5 g, 25 g
AA43087	Silver nitrate, Premion™, 99.995% (metals basis), Ag 63% min	5 g, 25 g, 100 g
AA10858	Silver nitrate, Premion™, 99.9995% (metals basis)	5 g, 25 g, 100 g
AA42209	Silver perchlorate, anhydrous	5 g, 25 g, 100 g
AA41443	Silver sulfate, Premion <sup>™</sup> , 99.99% (metals basis), Ag 68.9% min	25 g, 100 g
AA12112	Silver sulfate, Premion <sup>™</sup> , 99.999% (metals basis)	5 g, 25 g, 100 g
AA11416	Silver sulfide, 99%	5 g, 25 g, 100 g
AA12113	Silver sulfide, Premion™, 99.995% (metals basis)	5 g, 25 g
AA11539	Silver tetrafluoroborate, 99%	10 g, 50 g
AA13933	Silver trifluoroacetate, 98%	5 g, 25 g
AA88722	Silver trifluoromethanesulfonate, 98%	2 g, 10 g, 50 g
AA45496	Silver(I) citrate hydrate	5 g, 25 g, 100 g
AA11609	Silver(I) fluoride, 98%	5 g, 25 g
AA42577	Silver(I) oxide, 99.99% (metals basis)	1 g, 5 g, 25 g, 4 × 25 g
AA11407	Silver(I) oxide, 99+% (metals basis)	25 g, 100 g, 500 g
AA43268	Silver(I) oxide, Electrical Grade	250 g, 1 kg
AA11610	Silver(II) fluoride, 98+%	2 g, 10 g, 50 g
AA22695	Silver(II) oxide, 98%	5 g, 25 g, 100 g
AA40187	Silver(II) oxide, 99.9% (metals basis), Ag 86.6% min	5 g, 25 g, 100 g

Full product listing is available online.



Can't find the silver product or compound you need on thermofisher.com?

To request a quote for your specialty and bulk needs contact: **alfaaesar.bulksales@thermofisher.com** 

For more information, visit **fishersci.com/ThermoScientificChemicals** or **fishersci.ca/ThermoScientificChemicals** 

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