

# **Advanced Metal Powders**



**Whatever's in your mind, make it real.**

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## Advanced Metal Powders

Advanced Metal Powders from Cooksongold are gas atomised alloys developed for all Additive Manufacturing processes plus MIM applications.

The gas atomised spherical powders are adapted to work in any of the laser melting machines on the market and each batch of material is subjected to a rigorous quality control procedure to ensure batch to batch quality and repeatability.

**Our Advanced Metal Powders are ideal for use in a number of applications such as:**

- Direct precious metal 3D printing
- Metal Injection Moulding (MIM)
- Press and Sinter Technology
- Laser Sintering / Selective Laser Melting (SLM)
- Industrial applications such as Brazing

**The Cooksongold range includes precious metal powder for all additive manufacturing techniques, covering metals such as:**

- Yellow, Red & White 18ct Gold Powder
- Silver Powder
- Platinum Powder
- Base Metal Powders

**Other powders available on request.**



## ALNP000 18k 3N Yellow Gold Powder

11889

## Material Description

Cooksongold's ALNP000 is a gas atomised 18k yellow heat treatable gold powder in the standard 3N colour. The powder composition, flow characteristics and particle size distributions have been developed and tested to optimise performance in laser sintering applications. The material is rigorously tested to provide reliable and repeatable results across multiple builds and between different lots of material.

Alloy Composition:	
Product	ALNP000
Alloy Ref	11889
Gold	75.10%
Platinum	
Silver	12.00%
Palladium	
Ruthenium	
Colour	3N Yellow Gold
Alloy Properties:	
Particle size	< 40 micron
Density	15.5 g/cm <sup>3</sup>
Melting Range	870°C - 905°C
Annealed Hardness	125 - 145 HV
Melting Temperatures:	
Solidus	870°C
Liquids (°C)	905°C
Annealing Temperatures:	
Annealing Temp	600°C - 700°C
Water Quench	Yes

## Direct Metal Laser Sintering

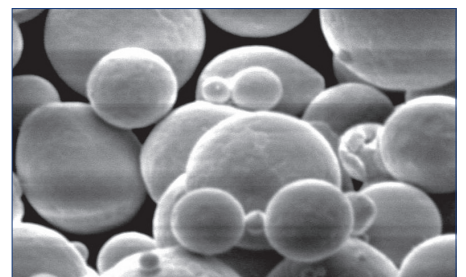
**Annealing:** The alloy may be annealed at 600°C - 700°C in a furnace, time dependent upon the size of the piece, and quenched. Alternatively, it may be heated to cherry red and then quenched from a black heat for maximum ductility.

**Machining:** Adjustments can be made using standard machining techniques.

**Solders:** Any of the hallmarking quality 18ct gold solders supplied by Cooksongold may be used with this alloy.

**Enamelling information:** Can be enamelled successfully. Any oxide or surface imperfections must be removed prior to application.

**Polishing:** Can be polished using standard equipment for 18ct gold alloys.



## For more information:

contact us on: +44 (0) 121 233 8192 or visit [www.cooksongold-emanufacturing.com](http://www.cooksongold-emanufacturing.com)



## ALIP000 18k 5N Red Gold Powder

11884

## Material Description

Cooksongold's ALIP000 is a gas atomised 18k red heat treatable gold powder in the standard 5N colour. The powder composition, flow characteristics and particle size distributions have been developed and tested to optimise performance in laser sintering applications. The material is rigorously tested to provide reliable and repeatable results across multiple builds and between different lots of material.

Alloy Composition:	
Product	ALIP000
Alloy Ref	11884
Gold	75.10%
Platinum	
Silver	4.50%
Palladium	
Ruthenium	
Colour	5N Red Gold
Alloy Properties:	
Particle size	< 40 micron
Density	15.2 g/cm <sup>3</sup>
Melting Range	870°C - 900°C
Annealed Hardness	145 - 165 HV
Melting Temperatures:	
Solidus	875°C
Liquids (°C)	900°C
Annealing Temperatures:	
Annealing Temp	600°C - 700°C
Water Quench	Yes

## Direct Metal Laser Sintering

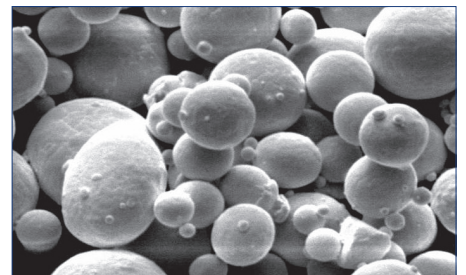
**Annealing:** The alloy may be annealed at 600°C - 700°C in a furnace, time dependent upon the size of the piece, and quenched. Alternatively, it may be heated to cherry red and then quenched from a black heat for maximum ductility.

**Machining:** Adjustments can be made using standard machining techniques.

**Solders:** Any of the hallmarking quality 18ct red gold solders supplied by Cooksongold may be used with this alloy.

**Enamelling information:** Can be enamelled successfully. Any oxide or surface imperfections must be removed prior to application.

**Polishing:** Can be polished using standard equipment for 18ct gold alloys.



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## Material Description

Cooksongold's ALZP000 is a gas atomised 18k white heat treatable gold powder in a premium white colour. The powder composition, flow characteristics and particle size distributions have been developed and tested to optimise performance in laser sintering applications. The material is rigorously tested to provide reliable and repeatable results across multiple builds and between different lots of material.

Alloy Composition:	
Product	ALZP000
Alloy Ref	11883
Gold	75.20%
Platinum	
Silver	3.00%
Palladium	13.90%
Ruthenium	
Colour	White Gold
Alloy Properties:	
Particle size	< 40 micron
Density	16.0 g/cm <sup>3</sup>
Melting Range	1100°C - 1170°C
Annealed Hardness	105 - 125 HV
Melting Temperatures:	
Solidus	1100°C
Liquids (°C)	1170°C
Annealing Temperatures:	
Annealing Temp	650°C - 750°C
Water Quench	Yes

## Direct Metal Laser Sintering

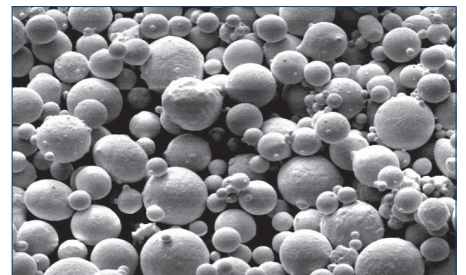
**Annealing:** The alloy may be annealed at 650°C - 750°C in a furnace, time dependent upon the size of the piece, and quenched. Alternatively, it may be heated to cherry red and then quenched from a black heat for maximum ductility.

**Machining:** Adjustments can be made using standard machining techniques.

**Solders:** Any of the hallmarking quality 18ct white gold solders supplied by Cooksongold may be used with this alloy.

**Enamelling information:** Can be enamelled successfully. Any oxide or surface imperfections must be removed prior to application.

**Polishing:** Can be polished using standard equipment for 18ct gold alloys.



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## Material Description

Cooksongold's AXHP000 is a gas atomised 955 Platinum / 045 Ruthenium powder that is a jewellery industry standard. The powder composition, flow characteristics and particle size distributions have been developed and tested to optimise performance in laser sintering applications. The material is rigorously tested to provide reliable and repeatable results across multiple builds and between different lots of material.

Alloy Composition:	
Product	AXHP000
Alloy Ref	647
Gold	
Platinum	95.60%
Silver	
Palladium	
Ruthenium	4.50%
Colour	Platinum
Alloy Properties:	
Particle size	< 40 micron
Density	20.7 g/cm <sup>3</sup>
Melting Range	1780°C - 1795°C
Annealed Hardness	120 - 140 HV
Melting Temperatures:	
Solidus	1780°C
Liquids (°C)	1795°C
Annealing Temperatures:	
Annealing Temp	1000°C - 1100°C
Water Quench	Yes

## Direct Metal Laser Sintering

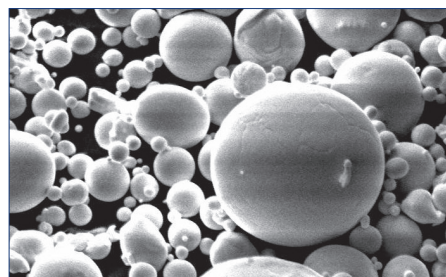
**Annealing:** The alloy may be annealed at 1000°C - 1100°C in a furnace, time dependent upon the size of the piece, and quenched. Alternatively, it may be heated to cherry red and then quenched from a black heat for maximum ductility.

**Machining:** Adjustments can be made using standard machining techniques.

**Solders:** Any of the hallmarking quality platinum solders supplied by Cooksongold may be used with this alloy.

**Enamelling information:** Can be enamelled successfully. Any oxide or surface imperfections must be removed prior to application.

**Polishing:** Can be polished using standard equipment for platinum alloys.



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## ASRP000 Brilliante Sterling Silver

28001

## Material Description

Cooksongold's ASRP000 is a gas atomised premium quality Brilliante sterling silver. Brilliante is manufactured to a patented proprietary composition that provides high tarnish resistance, improved ductility, superior whiteness and heat treatability. The powder composition, flow characteristics, and particle size distributions have been developed and tested to optimise performance in laser sintering applications. The material is rigorously tested to provide reliable and repeatable results across multiple builds and between different lots of material.

Alloy Composition:	
Product	ASRP000
Alloy Ref	28001
Gold	
Platinum	
Silver	93.30%
Palladium	
Ruthenium	
Colour	Brilliante Silver
Alloy Properties:	
Particle size	< 40 micron
Density	10.3 g/cm3
Melting Range	890°C - 950°C
Annealed Hardness	60 - 75 HV
Melting Temperatures:	
Solidus	890°C
Liquids (°C)	950°C
Annealing Temperatures:	
Annealing Temp	500°C - 600°C
Water Quench	Yes

## Direct Metal Laser Sintering

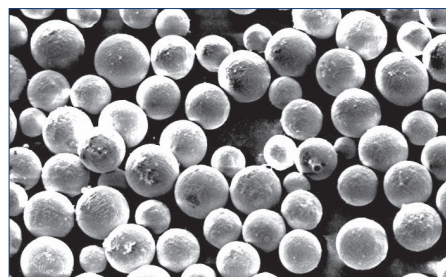
**Annealing:** The alloy may be annealed at 500°C - 600°C in a furnace, time dependent upon the size of the piece, and quenched. Alternatively, it may be heated to cherry red and then quenched from a black heat for maximum ductility.

**Machining:** Adjustments can be made using standard machining techniques.

**Solders:** Any of the hallmarking quality silver solders supplied by Cooksongold may be used with this alloy.

**Enamelling information:** Can be enamelled successfully. Any oxide or surface imperfections must be removed prior to application.

**Polishing:** Can be polished using standard equipment for silver alloys.



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### **Support from Cooksongold and EOS.**

Cooksongold and EOS provide the jewellery or watch case designer with a comprehensive service package that includes machine sales, powder production and sales, maintenance and repairs and finance options.

This e-manufacturing package, created specifically for the jewellery and watchmaking industries through the partnership of Cooksongold and EOS, is unique in the market today, providing the designer with an end-to-end solution with endless possibilities and making the impossible possible.



Quality assurance and certified reliability. With a quality management system certified in accordance with ISO 9001, an environmental management system in accordance with ISO 14001 and an occupational health and safety management system in accordance with OHSAS 18001. Cooksongold has a worldwide reputation for high standards of quality and expertise. Quality assurance is an integral part of our certified quality management system.

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### **For more information or general enquiries:**

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or visit: [www.cooksongold-emanufacturing.com](http://www.cooksongold-emanufacturing.com)

**Making the impossible possible.**