

METAL POWDERS – TECHNICAL DATA SHEET – PAGE 1

Steward Advanced Materials is the sole North American authorized representative of Atomised Systems Limited (ASL) based in Sheffield, United Kingdom, offering gas and water atomized metal powders. ASL operates a quality management system compliant to the requirements of BS ISO 9001 :2008

Gas Atomized Powders

ASL has gas atomizers with 1800t per annum capacity. The antisatellite system and hot gas technology allows the production of free-flowing spherical gas atomized powders. Their gas atomizers are producing powders with median particle sizes from less than 10 microns up to 250 microns.

Typical Gas Atomized Powders

A wide range of stainless steel grades are produced (martensitic, austenitic, Ph, duplex). As well as the more standard types, ASL produces many bespoke stainless steel grades, along with various nickel and cobalt based alloys.

Thermal Spray powder

- HVOF (typically 270/500 mesh)
- Spray Fuse (typically 140/325 mesh),
- PTA (typically 80/230 mesh), and other alloy grades

General Thermal Spray powders

- All Austenitic Stainless-Steel grades
- Iron, 80/20 Nickel Chrome
- Nickel (NiCrBSi self-fluxing alloys)
- Cobalt (Stellite) based alloys,
- HVOF (typically 270/500 mesh)
- Spray Fuse (typically 140/325 mesh)
- PTA (typically 80/230 mesh), and other grades.

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MIM Powders

- Stainless Steel 316L and 17/4 PH
- Iron based alloys

Typically, minus 500 mesh for all product

Additive Manufacturing Powders

- Stainless Steel 316L, 17/4 PH, 15/5 PH, 420 and a variety of other iron based grades
- Nickel based alloys and Cobalt based alloys

Typically, 270/500 mesh

Copper Brazing alloys

- Bronzes, Copper Phosphorus
- Copper Tin Phosphorus
- Tin Phosphorus Nickel
- Copper Manganese Nickel alloys

Typically, minus 140/270 mesh

Nickel Brazing alloys

- BNi, LNi (NK) series of Nickel based brazing filler alloys
- Silver Copper Tin powders for dental applications.
- Alloy AgCu 72/28 and AgSn 95/5

Typically, minus 140/270 mesh

ASL does not produce powders with any zinc, titanium or aluminum additions.

High Pressure Water Atomized Powders

ASL has high pressure water atomizers with 2500t per annum capacity with a melt size of 800kg, which is capable of producing spherical and nonspherical powders with D50's <10 μ m to >500 μ m. They also have a versatile water atomizing system with a 30 kg batch size, which produces powder for dental, precious metal and specialized trial production lots.

ASL produces many of the usual stainless steel grades, but also a significant amount of bespoke alloy types. Examples of the standard grades produced are indicated below:

- 316L Stainless Steel Filter powders – Discrete bands from 16 mesh down to 500 mesh. Typical size ranges currently supplied; 16–20 mesh, 20–35 mesh, 30–45 mesh, 50–100 mesh, 100–140 mesh, 170–270 mesh, 230–400 mesh, –325 mesh, –400 mesh and –500 mesh.
- Other Stainless–Steel Filter powders include (304L, 304B, 310L, 316B) – Discrete bands typically between 35 mesh to 500.
- Specialist powders for (high corrosion resistance in aggressive media environment) filter application, Monel 400, Hastelloy C22, C276, X, B and Inconel 625 – Discrete bands from 20 mesh down to 500 mesh.
- Structural parts manufacture – Press/Sinter grades.
- 300 Stainless Steel
- 400 Stainless Steel – Press/Sinter grades (–100 mesh).
- 17/4PH Stainless Steel
- 15/5 Stainless Steel
- Wide range of Steel alloys (–100 mesh).