Pearl® Micro Powders for Additive Manufacturing

Enhancing your performance
Additive manufacturing, also called 3D printing, is a game-changing technology opening up new horizons for many markets. This fast-growing innovative technology leads to entirely new ways of designing and manufacturing complex parts, impossible to produce with conventional technologies.

**Pearl® Micro metal powders** are tailored for the most demanding applications and markets:
- Aeronautics
- Space Industry
- Energy
- Automotive/Motorsport

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For almost a century, Aubert & Duval has been providing highly reliable metallurgical solutions that are developed, made and processed for the most critical industrial applications. Thanks to our strong metallurgical expertise and long-standing experience in powder atomization, we can support our customers to achieve success in their development and series production made by additive manufacturing. Since 1969, Aubert & Duval and its company sister Erasteel, part of Eramet Group, have been world leading producers of gas-atomized powders.

The performance of our powders at the heart of your additive manufacturing success

With several decades of experience in powder metallurgy, Aubert & Duval has acquired a very thorough knowledge of design and optimization of metal powders in order to meet customers’ most stringent requirements. Our core competencies include:

- Powder metallurgical expertise combined with state-of-art atomization technologies
- Large and scalable powder production capacity
- Customer-oriented services: flexibility and reactivity
- A mindset for continuous improvement and aerospace standards
- Stable and long-term partner
- Long-standing and leading supplier of aerospace critical parts
- R&D focused on innovative metallurgical solution through a collaborative approach

**Pearl® Micro metal powders** are designed for the full range of additive manufacturing processes:

**Powder Bed**
- Laser Beam Melting
- Electron Beam Melting
- Binder jetting & sintering

**Blown Powders**
- Laser Metal Deposition
- Cold Spray

**Key Benefits of Additive Manufacturing:**
- Design freedom
- Weight reduction
- Material savings
- No tools
- Less machining and assembly operations

www.aubertduval.com
A know-how dedicated to your needs

Pearl®Micro powders

NiSA

- Nickel-based superalloys
- Excellent mechanical properties up to temperatures around 650°C
- Good resistance to high temp. oxidation
- Excellent mechanical properties at high temperatures (1100°C)
- Very good resistance to oxidation
- Excellent mechanical properties at high temperatures up to 980°C
- Excellent high temperature creep rupture strength (980°C) combined with hot corrosion resistance

HX

- High strength and superior creep resistance
- Excellent mechanical properties at high temperatures up to 1000°C

Ni625

- Excellent high temperature creep rupture strength (980°C) combined with hot corrosion resistance

Ni247

- High strength and superior creep resistance
- Excellent mechanical properties at high temperatures up to 980°C

Ni738

- Excellent mechanical properties at high temperatures up to 980°C
- Good low temperature toughness

Ti

- Titanium alloys
- Lightweight
- High strength and corrosion resistance

Ti6Al4V

HPS

- High performance steels
- Excellent toughness properties
- High strength and corrosion resistance
- Good overall corrosion resistant properties
- Excellent toughness even to cryogenic temperatures

17-4PH

- Excellent high temperature creep rupture strength (980°C) combined with hot corrosion resistance

316L

Other alloys available upon request

Our offer includes

- Standard & customized compositions
- Tailored particle size distribution
- Packaging in plastic bottles or metallic containers
- Handling, HSE and storage recommendations
- Flexible service

Quality control

With 40 years of experience in high quality gas-atomized powders, Aubert & Duval has a high level of expertise and also dedicated laboratory equipment ensuring the highest quality for Pearl®Micro powders:

- Powder size distribution: sieving and laser diffraction
- Morphology: SEM pictures
- Chemical composition: X-Ray, Optical Emission Spectrometer (OES) and Atomic Absorption Spectrometer (GFAAS)
- Other physical properties: density, flowability

Our research centers and development teams support customers to develop new alloys and optimize powder characteristics to achieve the best material performance and processability for all additive manufacturing technologies.

Aubert & Duval partners with main global players to develop value-creating solutions.
Thanks to the most advanced technology in powder metallurgy and different scale of production units, Aubert & Duval can support you from first stages of development through industrial-scale production.

**Key benefits:**
- Melting in VIM furnace or with ESH technology
- N- or Ar- atomization
- High cleanliness level
- Highly spherical powder morphology
- Fully controlled low oxygen and carbon levels
- Minimize satellites & internal porosities
- High stability and reproducibility
- Broad range of batch sizes

**Our production facilities**
- **SWEDEN**
  - Gas atomization
- **FRANCE**
  - VIM gas atomization
  - + EIGA (R&D)
- **SPAIN**
  - VIM gas atomization
  - + EIGA (R&D)
- **CANADA**
  - Wire plasma atomization
  - Partnership with Pyrogenesis

**Quality certifications**
- EN 9100
- ISO 9001
- Customer accreditations
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