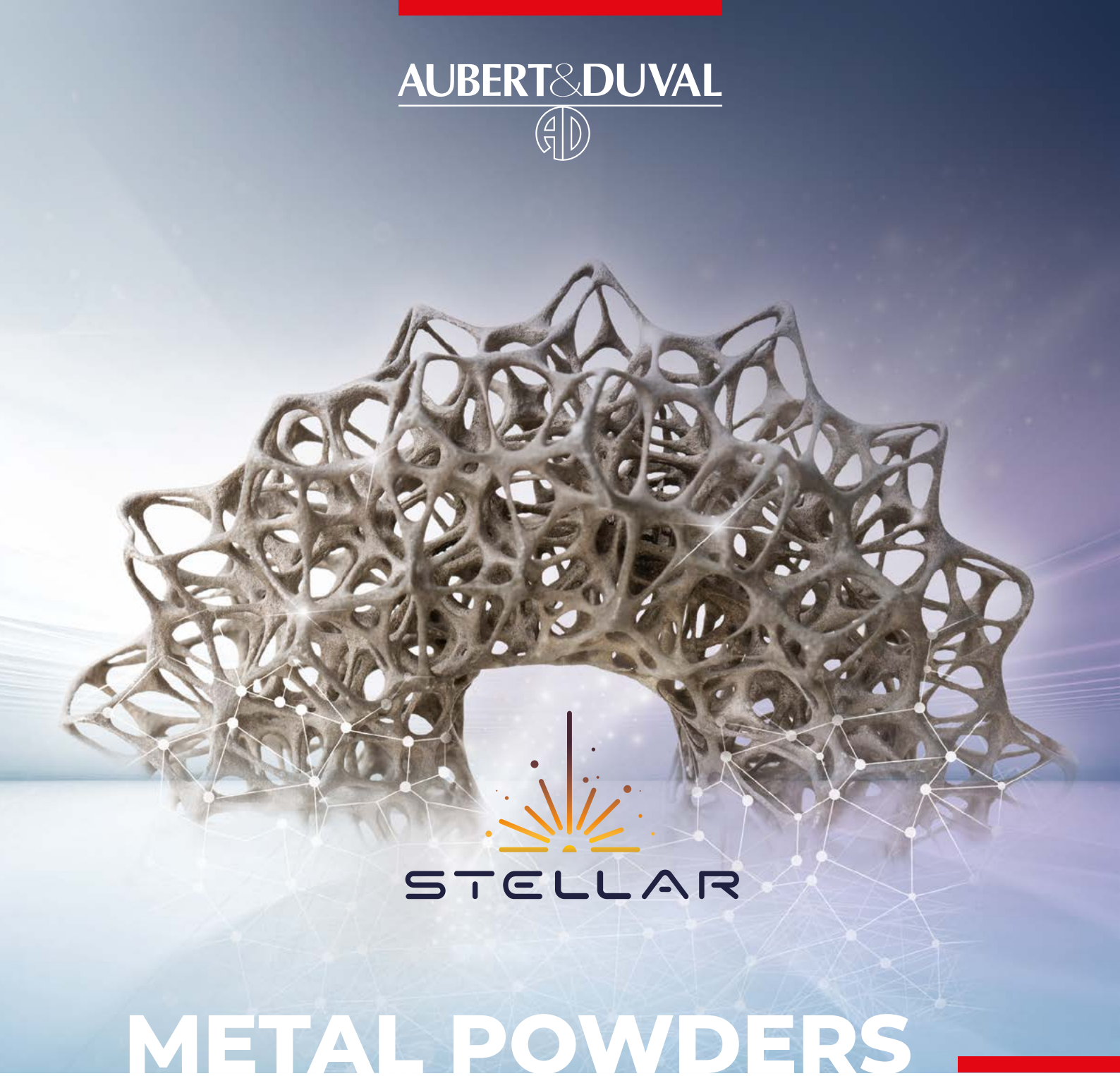
AUBERT&DUVAL



STELLAR

METAL POWDERS FOR ADDITIVE MANUFACTURING




STELLAR

Meeting the greatest of AM challenges

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.

Stellar metal powders are tailored for the most demanding applications and markets :

- Aeronautics
- Space Industry
- Energy
- Automotive/Motorsport

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.

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

Stellar 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 Depostion
- Cold Spray

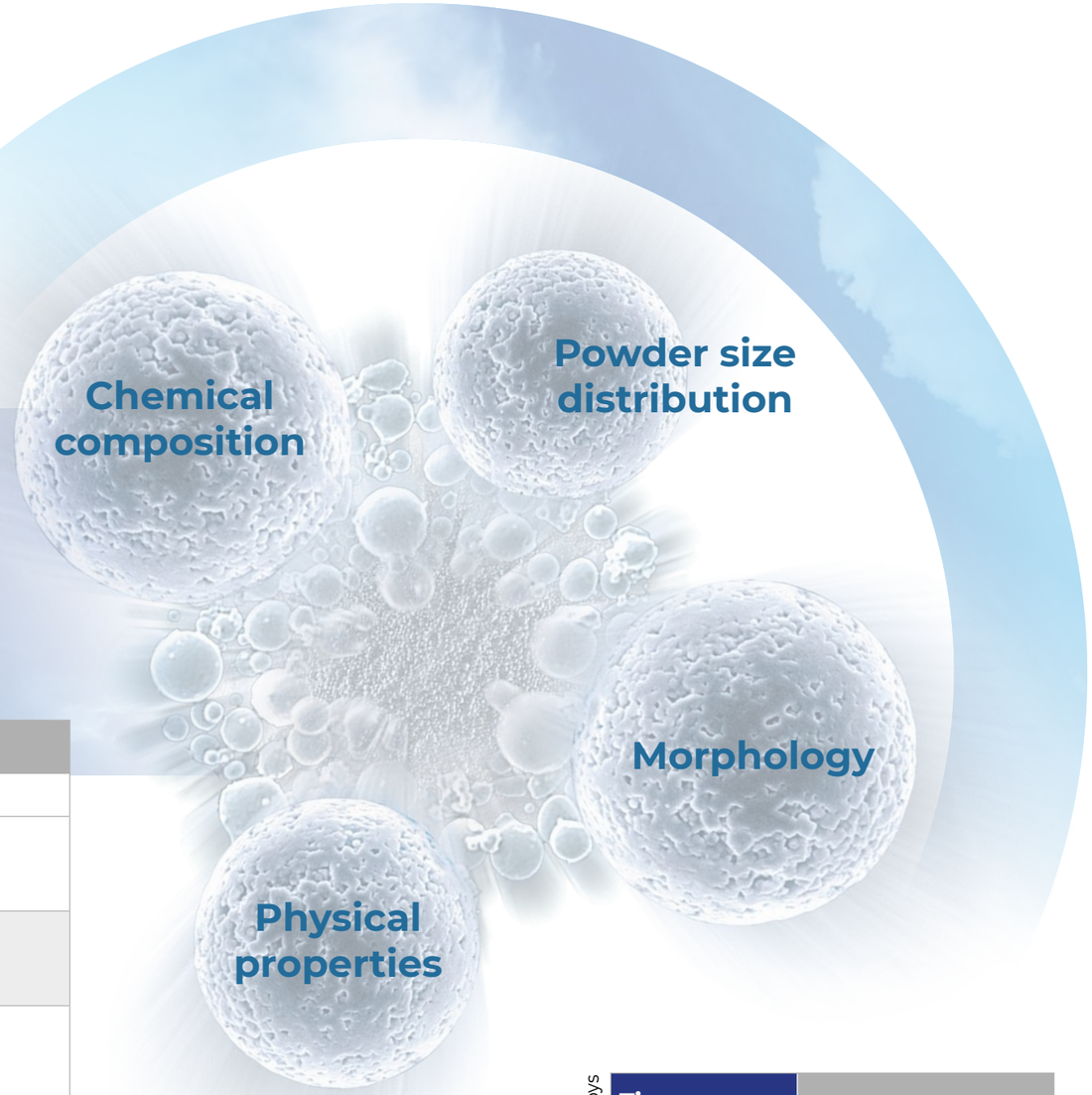
Key benefits

- Design freedom
- Weight reduction
- Material savings
- No tools
- Less machining and assembly operations

A know-how dedicated to your needs

As we are aware of each customer's requirements, we can offer tailored metal powder, designing the chemical and mechanical properties according to your specifications.

We support our customers in the definition of metal powder specifications in order to develop new metallurgical solutions to achieve targeted part performance.



Stellar metal powders

Nickel and cobalt superalloys

NiSA & CoSa	
A&D grade	Properties
Ni718	· Excellent mechanical properties up to temperatures around 650°C · Good resistance to high temperature oxidation
HX	· Excellent mechanical properties at high temperatures (1100°C) · Very good resistance to oxidation
Ni625	· Excellent mechanical properties at high temperatures up to 980°C · Excellent corrosion resistance · Good low temperature toughness
Ni247	· High strength and superior creep resistance. · Excellent mechanical properties at high temperatures up to 1000°C
Ni738	· Excellent high temperature creep rupture strength (980°C) combined with hot corrosion resistance
ABD®-900AM	· For high temperatures up to 900°C/1650°F · Good strength and creep properties · Good oxidation and corrosion resistance
AD730®	· For temperatures up to 750°C/1382°F · High strength, creep and fatigue properties
MHA3300®	· For temperatures up to 850°C/1470°F · Excellent low cycle fatigue and creep strength at high temperature · Good oxidation resistance

ABD® is a registered trademark of Alloyed
MHA3300® is a registered trademark of Mitsubishi Heavy Industries

Titanium alloys

Ti	
A&D grade	Properties
Ti6Al4V ELI*	· Light weight · High strength and corrosion resistance

Particle size distribution

Laser Beam Melting:
· 10-53 or 15-63 µm

Electron beam Melting:
· 45-106 µm

Direct Energy Deposition:
· 45-90 µm or 45-106 µm

Customized particle size distributions upon request
** in partnership with Pyrogenesis*

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 its metal 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

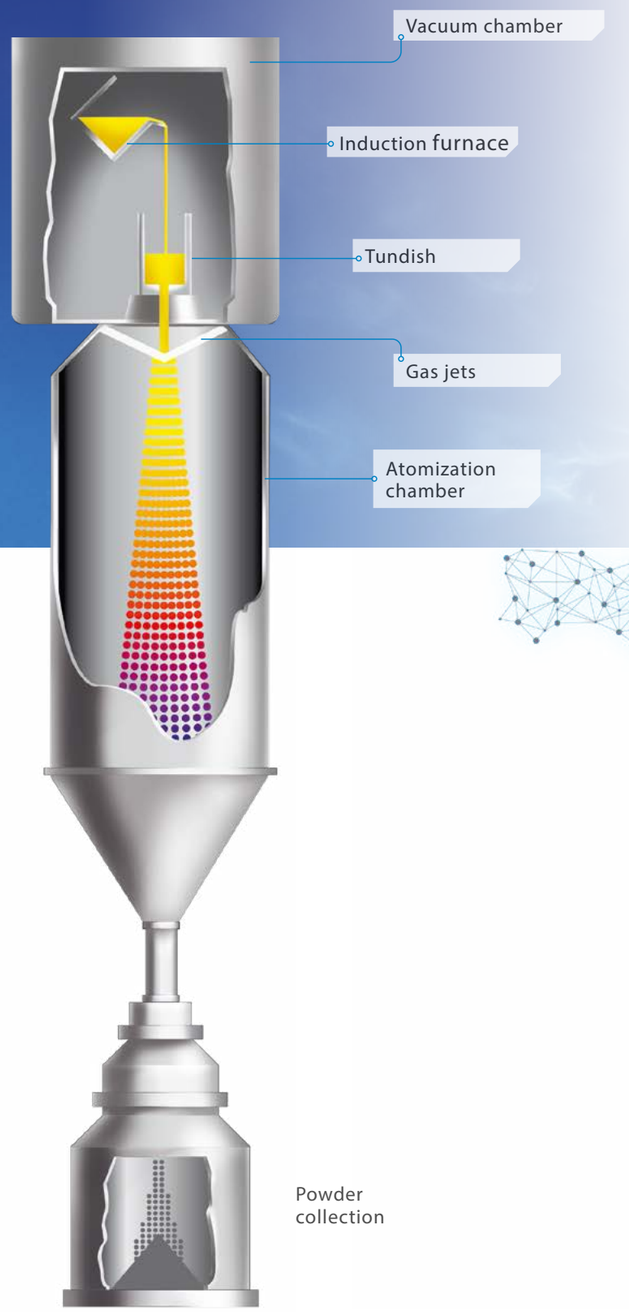
Our research centers and development teams support customers to develop new alloys and optimize powder characteristics to achieve the best material performance and processability for all additive manufacturing technologies.

Aubert & Duval partners with main global players to develop value-creating solutions.

Our powder atomization process

VIM Gas Atomization

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.



STELLAR
METAL POWDERS

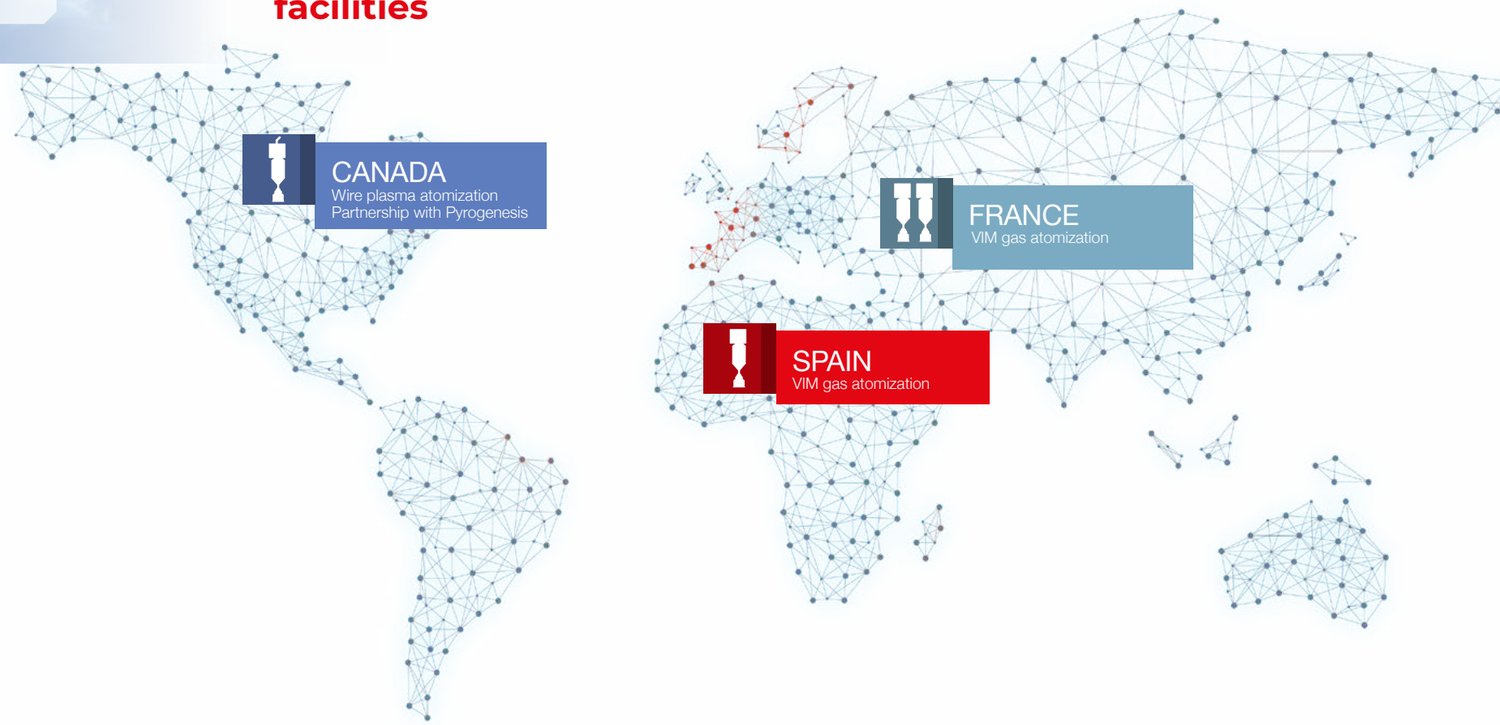
Key features

- Melting in VIM furnace
- 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

Quality certifications

- EN 9100
- ISO 9001
- Customer accreditations

Our production facilities



AUBERT&DUVAL

STELLAR
3D PRINT YOUR FUTURE

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