METAL POWDERS

MIMETE®

MASTERING THE SCIENCE OF METALS

FOMAS GROUP

THE GROUP

FOMAS Group is a trusted global partner and industry leader in metal powders, open die forgings and seamless rolled ring. Since 1956, the Group has combined advanced metallurgy, innovation, and precision engineering to deliver high-performance, sustainable solutions — supported by a strong global footprint.

Our purpose is to enable sustainable energy, reliable power and limitless motion by moving the needle in mastering the science of metals with a responsible approach. The Group's Mission is to play to win with **innovation, responsiveness and a passionate commitment to long-term partnerships**. Our vision for the future is to be a **multicultural, people-centric organization** leading our core businesses by leveraging cutting-edge competencies in the science of metals and embracing digital transformation. Everything we do is underpinned by our core values of **proactivity, integrity, meritocracy, accountability, reliability, transparency & trust**.

1,400

EMPLOYEES

The Group has about 1,400 employees all around the world. Working with us signifies entering a team which is focused on continuous evolution, a company that measures its success in the achievement of excellence at each step of function and process. The attention dedicated by our Group to safeguarding the **health and safety** of its employees and to improving the environmental performance of its activities represents a key reference to the continual improvement of business reliability. We believe this is essential to ensure the long-term health of our business. FOMAS Group promotes safety and environmental protection in every aspect of its production cycle.

Our core values: proactivity, integrity, meritocracy, accountability, reliability, transparency & trust.

This mindset is the foundation on which the company builds the continuous improvement of environmental, safety and health conditions in its sites worldwide. An integrated Group HSE management system is the means through which this goal is pursued. In a continuous effort to reduce its impacts, FOMAS Group sustainability process adopts also **energy management** best practices. An example is the adoption of certified energy management systems and best practice sharing between the sites.

FOMAS GROUP STRUCTURE

	EUROPE		ASIA		NORTH AMERICA
COUNTRY	ITALY	FRANCE	INDIA	CHINA	USA
PRODUCTION	• **FORGINGS** • **RINGS** • **METAL POWDER**	• **RINGS**	• **FORGINGS** • **RINGS**	• **RINGS**	• **RINGS**
PLANT	• FOMAS • ASFO • HOT ROLL • MIMETE	• LA FOULERIE	• BAY-FORGE	• FOMAS DALIAN	• FOMAS USA

MARKETS
POWER GENERATION powergen@fomasgroup.com
AERONAUTIC, SPACE & DEFENCE aerospace@fomasgroup.com
OIL & GAS oilandgas@fomasgroup.com
INDUSTRIAL industrial@fomasgroup.com

METAL POWDERS: OUR SOLUTIONS

Serving the Power Generation, Oil & Gas, Industrial, Biomedical, and Aerospace sectors.

At FOMAS Group, we produce high-quality gas-atomized metal powders, offering the perfect solution for your needs.

Our iron, nickel, and cobalt-based powders, branded as **MIMETE®**, are tailored for a broad spectrum of applications, including additive manufacturing and thermal spray, thanks to the diverse particle size distribution (PSD) we can furnish. Additionally, our alloy offer enable us to supply metal powders for the Power Generation, Oil & Gas, Industrial, Biomedical, and Aerospace markets.

We provide a **tailor-made approach**, ensuring we meet customer requirements. Our comprehensive technical service and support throughout the entire order process leverages our metallurgical expertise and high-quality standards.

Our state-of-the-art facility features a Vacuum Inert Gas Atomizer (VIGA) plant, which guarantees the highest purity, flowability, and sphericity of our powders, and an in-house laboratory ACCREDIA certified, in accordance with the requirements of the ISO/IEC 17025 international standard.

OFF-THE-SHELF OFFER

We offer off-the-shelf metal powders for immediate use in various applications.

Iron-based alloys

- MIMETE® M 316L
- MIMETE® M F51
- MIMETE® M F53
- MIMETE® M 17-4PH
- MIMETE® M M300
- MIMETE® M H13

Nickel-based alloys

- MIMETE® V 625
- MIMETE® V 625 NACE
- MIMETE® V 718
- MIMETE® V X

Cobalt-based alloys

- MIMETE® N 75

PARTICLE SIZE DISTRIBUTION

Small 0-20 µm	**Large** 50-150 µm or 50-100 µm
Medium 15-45 µm or 20-60 µm	**One size** 0-150 or 0-300 µm

APPLICATIONS

3D printing (PBF)	Welding
DED	Thermal spray
Cladding	HIPping

TECHNICAL SUPPORT

With a solid foundation in metallurgical science and process engineering, we ensure a technical support at every point in the procurement journey.

A TAILOR-MADE APPROACH

Our approach focuses on providing our customers with customized services, ensuring swift and flexible responses to their needs.

- **Hassle-Free Reordering**: experience a streamlined process for reordering, tailored to enhance your convenience and efficiency.
- **Customized Delivery**: we can offer short delivery time on "commercial grades" powders. All powders are packaged in sealed polymeric containers, chosen for robustness and protection from moisture absorption, and stored in highly controlled areas. Upon request, powders can be delivered directly to the customer's drum. Likewise, customized batches of sizes can be delivered.

CUSTOMIZED OFFER

Upon request, we also supply customized powders, driven by our problem-solving mindset and commitment to delivering outstanding results. This dedication makes us the preferred partner for trials and development orders. Strict process separation and comprehensive clean-down procedures safeguard the purity and integrity of each customer's material, without exception.

- Development of new grades.
- Fine tuning (chemical and/or granulometric) of commercial grades.

TRACEABILITY

Every step of the process is fully monitored and traced through the latest software application, able to record, model, supervise, and control.

METAL POWDERS FOR MARKET-SPECIFIC NEEDS

POWER GENERATION

In the Power Generation sector, our **nickel-based metal powders** are engineered for **additive manufacturing** applications, and they are ideal for producing customized turbine blades, heat exchangers, and components with internal cooling channels.

For **thermal spray** applications, we offer both **nickel-based and cobalt-based alloys**. These powders are used to create protective coatings that resist wear, oxidation, and high-temperature corrosion. Typical applications include stator and rotor blades, compressor and combustor components, and structures exposed to cavitation or erosion.

OIL & GAS

In the Oil & Gas industry, our **nickel-based and iron-based alloys** support **additive manufacturing** of custom components for drilling systems, as well as valves, impellers, choke valves, and compact heat exchangers. These materials are also well-suited for downhole tools.

For **thermal spray** solutions, our **nickel-based powders** provide anti-corrosion and anti-wear coatings for components such as valves and valve seats, pumps, impellers, stems, and shafts. These coatings are particularly effective for pipes and joints exposed to abrasive or high-pressure fluids.

Turbine blade
Powder used: MIMETE® V 725

Labyrinth cage for a gas valve
Powder used: MIMETE® V 718

AEROSPACE

In Aerospace, we supply **nickel-based and iron-based alloys for additive manufacturing** of high-performance parts like turbine blades, rocket engine components, injectors, and air ducts.

For **thermal spray**, we supply powders—primarily **nickel-based alloys**—used to protect critical engine components with wear-resistant coatings that help maintain tight tolerances and reduce friction. They are also applied to landing gear and hydraulic systems, offering protection against wear, corrosion, and thermal stress.

mastering the science of metals

INDUSTRIAL

For the Industrial market, **additive manufacturing** enables the production of machine tools, automation and robotics components, molds, and cutting tools with high precision and customization. For these applications, we mainly offer a range of **iron-based alloys**.

In **thermal spray** applications, our **nickel-based alloys** are used to create durable coatings on cutting and welding tools, as well as to refurbish worn components such as mechanical seals and bearings—extending their service life and enhancing performance.

Clamp for engine cam cover
Powder used: MIMETE® V 718

BIOMEDICAL

In the Biomedical field, we offer **cobalt-based and iron-based alloys for additive manufacturing** of customized bone structures, including cranial and mandibular implants, as well as prosthetics and patient-specific surgical instruments.

For **thermal spray**, our **cobalt-based powders** are used to coat bone-contact surfaces and reusable surgical instruments.

Video laryngoscope probe
Powder used: MIMETE® M 316L

EQUIPMENT

VACUUM INDUCTION GAS ATOMIZATION PLANT

- Design based on decades of experience in VIM plants and atomizing process and equipment
- Able to atomize via argon or nitrogen
- Able to operate at higher temperatures than standard gas atomizers, suitable for high melting point and refractory alloys
- High-vacuum pumps for minimum content of oxygen and residuals
- Special nozzles dedicated to specific alloys and particle sizes
- Developed for maximum flexibility

POST PROCESSING

HANDLING FACILITIES

Flexible semi-automatic handling device, able to manage different storage units and perform a variety of movements.

SIEVING FACILITIES

- Air classifier to efficiently remove ultrafine and fine metal powders (<20 µm), overcoming the limitations of conventional screening methods. By producing metal powders that are more amenable to mechanical sieving, it enhances overall performance, product stability and ensures precise particle size distribution. This state-of-the-art technology leverages both kinetic and potential energy to achieve superior separation and classification.
- State of the art multi-frequency sieving devices with extended screening area and high-volume sieving capacity. Different working meshes down to a few microns, the latest in terms of cutting-edge technology. All machines have internal stainless-steel mirror polished surfaces and work under inert gas, preventing any risk of contamination.

PACKAGING FACILITIES

High-capacity semi-automatic dosing machine: its parameters can be set to fill different bottle types. Process control thanks to high precision scales. Operating parameters monitored and recorded for each product.

QUALITY

FOMAS Group places quality at the core of all its operations, in every step of manufacturing and customer service. Quality means ensuring that our metal powders comply with all the required standards and customer expectations in terms of performance, reliability, and safety.

This commitment translates into a set of practices and standards encompassing:

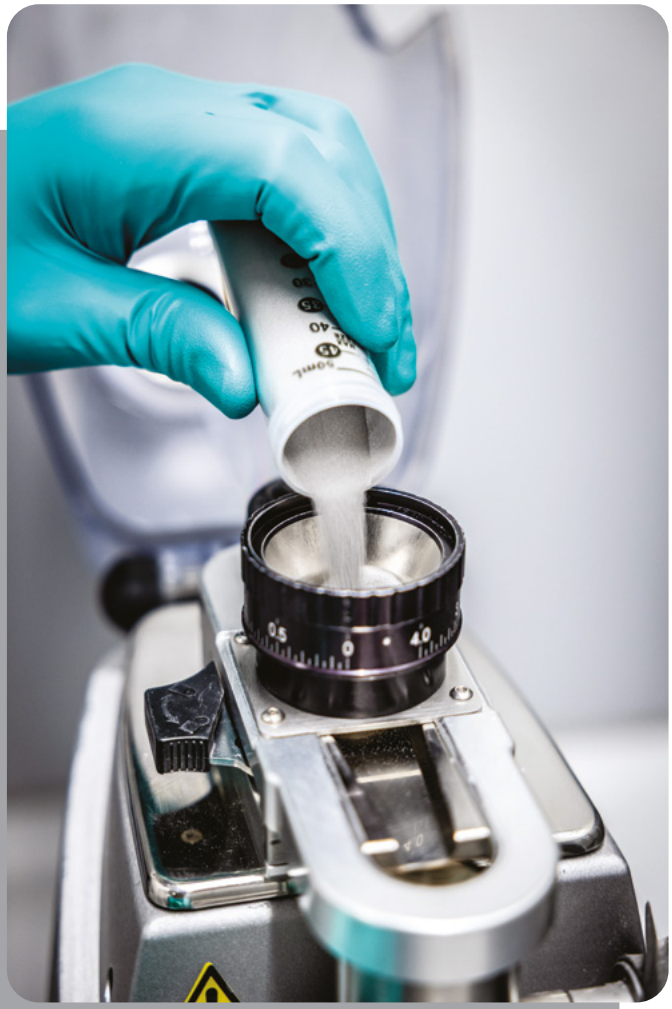
- **Strict Material Control**: careful selection of raw materials and constant monitoring of their properties.
- **Advanced manufacturing processes**: using state-of-the-art technology and procedures to process metals.
- **Testing and continuous verification**: each melt undergoes over 20 tests to ensure the highest quality assurance.
- **International certifications and standards**: compliance with international standards and obtaining relevant certifications that attest to the quality of FOMAS Group's products and processes.
- **Continuous employee training**: cyclic training on new manufacturing methods, technologies and quality standards to ensure that our staff is always up to date with the best practices in the industry.
- **Customer feedback and continuous improvement**: FOMAS Group places great importance on customer feedback as a tool for an incremental enhancement process. Through the analysis of feedback, the company strives to refine its processes and products to better meet market needs.

IN-HOUSE LABORATORY

FOMAS Group is equipped with two testing laboratories accredited by ACCREDIA, the Italian national accreditation body, in accordance with ISO/IEC 17025 requirements. One of them is located in our metal powders production facility.

The laboratory is equipped with cutting-edge technology and precision instruments, enabling comprehensive testing, examination, and analysis of materials and final products. We perform comprehensive chemical, morphological, physical, metallographic, and mechanical assessments to uphold the highest quality standards.

Our quality tests thus guarantee compliance with industry standards and ensure long-term performance and reliability of products under various stress regimes and conditions of use. The laboratory is an added value that underlines the Group's commitment to providing superior quality and highly reliable solutions, meeting the most stringent requirements of our customers.



TYPE OF ANALYSIS	TEST	REFERENCE STANDARD	EQUIPMENT
Chemical	XRF	ASTM E1621, ASTM E572, ASTM E2465	Wavelength Dispersive X-ray Spectrometer
	ICP-OES	ASTM E1479, ASTM E2594	Inductively Coupled Plasma Optical Emission Spectrometer
	ONH	ASTM E1019	Oxygen, Nitrogen and Hydrogen Analyzer
	CS	ASTM E1019	Carbon and Sulfur Analyzer
	PMI	ASTM E1476	Handheld XRF
Morphological	PSD	ASTM B822, ISO 13320-1	Particle size analyzer
	SIEVE ANALYSIS	ASTM B214	Mechanical Sieve Shaker
	SEM	-	Scanning Electron Microscope
	IMAGE ANALYSIS	ISO 13322-2	Dynamic Image Analyzer
Physical	FLOWABILITY	ASTM B213, ASTM B964, ISO 4490	Hall Flowmeter Funnel Carney Flowmeter Funnel
	APPARENT DENSITY	ASTM B212, ASTM B417, ISO 3923-1	Apparent density kit
	TAP DENSITY	ASTM B527	Tapping Apparatus
Metallography	OM	ASTM E3, ASTM E407	Optical Microscope
Mechanical	TENSION AT ROOM TEMPERATURE	ASTM A370, ASTM E8/8M	Tensile test machine
	TENSION AT ELEVATED TEMPERATURE	ASTM A370, ASTM E21	Tensile test machine and furnace
	IMPACT	ASTM A370, ASTM E23, ISO 148-1	Charpy impact machine
	HARDNESS	ASTM A370, ASTM E10 ASTM E92, ASTM E18	Brinell, Vickers, Rockwell hardness test machines (also portable)
	STRESS-RUPTURE	ASTM E139, ASTM E292	Creep test machine

OUR CERTIFICATION

FOMAS Group's plants hold various certifications and accreditations that demonstrate compliance with international standards for quality, safety, and environmental responsibility. Our metal powders production plant has the following certifications and accreditations:

- ISO 14001
- ISO 45001
- ISO 50001
- EN 9100 & ISO 9001
- ISO/IEC 17025

For a complete list of certifications and qualifications of FOMAS Group, scan the QR code to access our dedicated webpage.

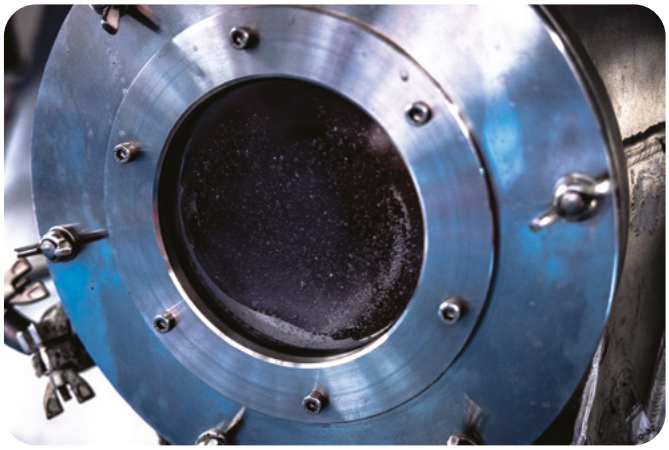
MASTERING THE SCIENCE OF METALS

A journey that began in **1956** has, over the past years, led us to master the ultimate state of metals: powders. Since our origins, FOMAS Group has been globally recognized as one of the finest forge-masters.
From forging and rolling solid metal, to refining it through an Electro Slag Remelting plant, and ultimately managing it as powders, we have progressively conquered each state of metal transformation. By reaching the core of metallurgy, we really are at the core of the process, where nothing further is beyond.
Decades of experience in managing metal from every perspective have brought our people to be at the centre of each step of our evolution.

This expertise is reflected in our slogan, "**Mastering the Science of Metals**," a testament to our comprehensive understanding of metal behavior.

70

YEARS OF EXPERIENCE



INNOVATION

At FOMAS Group, innovation is at the heart of our operations.

We leverage automation and digitization to stay ahead of the curve, utilizing cutting-edge software and tools such as Business Intelligence, Digital Twin, Big Data management and analysis, cloud solutions, and Artificial Intelligence. In accordance with Industry 4.0 all machines in our metal powders production plant are controlled by PLC panels for powder process route integration and maximum control for traceability.

LEAN APPROACH FOR OPTIMAL EFFICIENCY

Our approach is centered around lean principles, aimed at minimizing waste and optimizing manufacturing processes. By streamlining our operations, we reduce inefficiencies and promote sustainability. The effective management and analysis of large datasets (mega-data) enable us to identify areas for improvement and implement targeted enhancements.

STATE-OF-THE-ART TECHNOLOGY FOR SUPERIOR QUALITY

FOMAS Group is committed to driving growth and innovation.

Announced in 2025, FOMAS Group's upcoming facility features a 5-ton controlled atmosphere furnace equipped with vacuum induction melting (VIM) technology, dedicated to processing superalloys. This cutting-edge technology will enable us to achieve exceptional control over metal quality, develop customized melting practices tailored to specific alloy compositions, and further advance our circular economy objectives.

SUSTAINABILITY

Our sustainability strategy is anchored on well-defined pillars that set the framework for short, medium, and long-term targets across departments. This strategic approach enables us to integrate sustainability into every facet of our operations.

THE PILLAR OF OUR ESG STRATEGY:

1

Mastering the science of metals

2

Awareness and commitment to the planet

3

People-centric

4

Creating shared value for the community

5

Embracing the change with our partners

Contact Us

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