

MERSEN



EXPERT
RELIABLE
INNOVATIVE
HUMAN
ENTREPRENEURIAL
RESPONSIBLE
GLOBAL
FUTURE



Mersen wishes to share its extensive expertise in high performance equipment, safety and reliability of electrical installations with its customers. Mersen designs innovative solutions to address its clients' specific needs to enable them to optimize their manufacturing process in sectors such as Energy, Transportation, Electronics, Chemical, Pharmaceutical and Process industries.



MERSEN A NEW NAME CONVEYING...

Expertise

Mersen is a global expert in **materials and equipment** for extreme environments and in the **safety and reliability of electrical equipment**.

Market strategy

Over time, we have transformed our solution-oriented culture into a full-fledged market strategy. We are constantly watching **the structural trends in the Energy, Transportation, Electronics, Chemical/Pharmaceutical sectors and Process industries** in order to offer the best solutions to meet our customers' ever-changing needs.

Innovation

Mersen is reliable, competitive and innovative. It always anticipates its customers' current and future challenges.

Leadership

Mersen ranks as one of the top global leaders in its markets and would like to be recognized as the leading player in all of them, particularly in alternative energies.

Societal and environmental commitment

Mersen never compromises on matters of safety, environmental responsibility, or the standards governing its operations across the world. This approach is extended by its strong commitment to sustainable development, the keystone to its mission statement.

Smart globalization

In order to offer its customers local presence and rapid response time, Mersen has successfully developed its industrial and commercial presence on all five continents. The Group views the resulting language and cultural diversity as one of its most valuable resources.

120: the age of renewal

1891-1892 - After patenting the carbon graphitization process in 1893, two companies, the Group's founders, were formed almost simultaneously. They were viewed as having a **spirit of innovation**.

2010: Carbone Lorraine transforms its identity and changes its name to Mersen. Loyal to the values it was founded on, and still driven by a need to innovate, the Group renews its promises for a bright future.



Interview

with **Ernest TOTINO**
Chairman of the Management Board.

**“ Everything is changing!
Not just for us,
but for the whole world! ”**

Why is Carbone Lorraine changing its name to Mersen?

Mersen still shares the same values and attributes as Carbone Lorraine. We are changing our identity because our Group has considerably changed since its inception. One of our greatest strengths is our ability to adapt to global industrial changes. We remained discreet about our changes that were gradual, and little by little, our image no longer reflected who we really were. We needed to express our true identity and what we stand for. This name change is not an end in itself, but a starting point, reflecting the repositioning of the Group.

How do you want to present Mersen to the world?

We want to send out a message that we're a strong, innovative, and harmonized global Group, which is making a commitment to the future through a major emphasis on sustainable development. Let's be modest: we are certainly not going to revolutionize the world all by ourselves! But we are here to help those who are breaking new ground. We provide them with solutions to optimize their equipment and to innovate new systems. Carbone Lorraine is changing its name to Mersen, it is more than an identity change; it is a whole new mission statement.

**“ We have a role to play
in many future challenges. ”**

What does Mersen stand for?

We have developed a strategy founded on four growth drivers: sustainable development, Asia, selective acquisitions and innovation, of course. In just a few years, we have already witnessed tangible results, with 21% of our sales coming from Asia and 40% of our sales linked to sustainable development. We have achieved these results by developing a solution-oriented culture and a stronger market approach. Mersen wants to be recognized as the leading industrial player in all of its markets, especially in alternative energies. This new vision combined with our traditional strengths assures a future filled with promise.

But why now, why adopt a new name in such challenging global economic conditions?

Precisely because everything is currently changing! Not just for us, but the whole world! We can observe this in Transportation, with the latest boom in trains and transit systems. We can see it in Energy, as we prepare for the post-oil era and need to combat CO2 emissions. This entails pursuing alternative solutions, from biomass to nuclear power and searching for greater energy efficiency. In Pharmaceuticals, the challenges are enormous, with the exponential growth in healthcare needs. We have a role to play in every one of these future challenges.

What makes Mersen different, in your opinion?

Mersen is a Group with strong roots, offering expertise, inquisitiveness and innovation as dominant genes. Its core values are its human resources, reliability and responsibility. It is an integrated entity that relies, above all, on the women and men it employs. They are the source of our inventiveness. Our teams possess expertise and develop innovative solutions by listening to market needs and keeping abreast on the latest technological advances. This human element is backed by a completely overhauled manufacturing base. Finally, we offer a global distribution and maintenance network that puts us right where our customers are. We are close to them and to their developments. All these factors set us apart and are the keys to our success.

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is not an end in itself,
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A specific expertise,
offering an extensive range
of solutions

Our expertise provides the industrial world with **advanced know-how and knowledge, and precise and specialized technical processes and skills.**

Our product range originates from our **longstanding expertise in carbon-based materials and electric current** and has greatly diversified into related fields. **Other materials have been added more recently,** including noble metals, ceramics and other carbon products. Our electrical products' range, also graphite-based, (motor brushes and other contact equipment), **now includes many other applications,** such as fuses, cooling devices and signal transmission systems.

Our solutions are utilized in Process industries, production and power distribution systems, Chemical, Pharmaceutical and Electronic facilities, as well as Rail transportation systems.



AN INDUSTRIAL GROUP WITH MARKET-LEADING EXPERTISE IN ITS AREAS OF SPECIALIZATION

Mersen, a brand standing for unequivocal reliability

Reliability has always been the foundation for our reputation. It guarantees our customers **safe, high-performance equipment that can withstand the most demanding usage conditions** under any circumstances.

This perfect understanding of our customers' needs is the product of our local presence and close customer contacts. It is also the result of our **continuous improvement and quality programs.**

This reliability is backed by dedicated maintenance that extends our products' life expectancy, thus contributing to the **development of more sustainable infrastructures.**

Production capacity at full throttle

Our manufacturing base **includes more than 56 sites on five continents** and has been completely overhauled in the past decade to offer identical high quality products in all of its locations.

Connected by a vast distribution network, this production capacity offers **the best lead times just about anywhere on the planet.**

A solution-oriented culture

Our developments primarily aim to meet or anticipate our customers' needs and market requirements.

This solution-oriented culture stems from the specialized nature of our business activities. Since we mainly manufacture small series and often customized products, our applications are often designed to specifications that may only apply to one order.

We have emphasized this approach **by adopting a market strategy.**

Each research project is first subject to a thorough study of the changes in industrial demand. This proactive technological marketing method is what makes us a dedicated innovative partner for our customers.



—• ENERGY

Future challenges include continuously increasing needs due to the depletion of fossil fuel reserves and urgent climate concerns.

The main solution to this three-fold challenge-the rapid development of alternative energies-requires the invention of technological solutions which improve their competitiveness.

Our positions – our developments

Mersen's objective is to realize one third of its annual turnover in the Energy market by 2012 and is therefore investing on all fronts.

• **Conventional energies**

Approved by the main generator OEMs, our equipment has established our leadership in supplying thermal power plants.

• **Wind**

Our numerous solutions, such as signal transmission systems, carbon brushes and brush holders, slip ring assemblies, fuses and cooling devices, have enabled us to become a supplier of reference to the wind industry, a leader in both the original equipment and replacement markets.

• **Solar**

Our hydrochloric acid production units can be used to manufacture trichlorosilane (TCS), a key ingredient in the production process for polysilicon, the main component in photovoltaic panels. Our ultra-pure graphite equipment enables polysilicon producers to increase their output while reducing costs. Thanks to this competitive edge, Mersen is a driving force in the development of this industry.

• **Nuclear**

Proficient in the specific procedures and regulations of this alternative energy, Mersen has positioned itself in the design of the high-tech equipment used in the auxiliary reactor circuits.

—• TRANSPORTATION

Future challenges include a stronger demand for personal mobility solutions, especially in Asia. Urban and rail mass transit are the only viable long-term solutions and require electrical systems that deliver higher performance and greater reliability.

Our positions – our developments

Transit and train systems: we provide solutions for both railway infrastructure and rolling stock.

Our applications include electrical protection (cooling devices, fuses and contactors) as well as current transmission (third rail shoes, pantograph strips, brushes for traction motors and auxiliaries, etc.).

We also operate in the **Aerospace industry**, developing composite material components and electrical control systems.

—• CHEMICAL AND PHARMACEUTICALS

Future challenges - With a constantly growing demand for fertilizers to meet global food requirements as well as consumer staples, chemical products are everywhere. With life expectancy on the rise, the pharmaceutical industry must meet new performance goals for ever-increasing healthcare needs.

Our positions – our developments

We custom design equipment in graphite and in noble metals that can withstand high temperatures and corrosive fluids. Our reactors, mixers and heat exchangers are complete turnkey systems. This global expertise has established us as a world leader in anticorrosion equipment activities, which we are consolidating in strategic markets, such as Asia and the Middle East.

—• ELECTRONICS

Future Challenges - From microprocessors to LEDs, semiconductors are being used for new applications. While becoming more complex, power electronic installations are requiring more effective protection equipment.

Our positions – our developments

In semiconductor manufacturing, we are active upstream, producing the high value-added graphite required to produce them.

In power electronics, our downstream solutions - industrial fuses and coolers - are used in the maintenance and replacement markets.

In both of these fast-expanding sectors, our highly specialized expertise assures us a bright future.

—• PROCESS INDUSTRIES

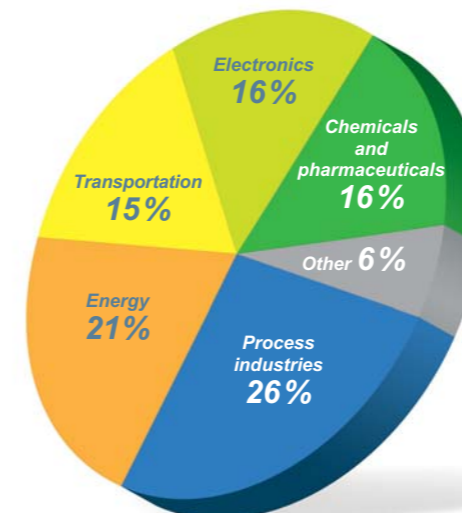
Future challenges include supporting these industries as they look to achieve greater energy efficiency, meet their needs as they address and anticipate safety concerns.

Our positions – our developments

Process industries such as Steel, Paper and Glass production, have always been our core sector of activity. Mersen's carbon brushes, industrial fuses, contacts and custom-designed graphite components are used in production lines around the world. Each processing line has its unique characteristics, and our extensive production and distribution network puts us right where our customers need us to meet their specific needs and delivery time requirements.

Balanced activities two thirds of which are generated in growth markets

BREAKDOWN OF 2009 SALES



Water treatment, a new market for the future

By designing filter tanks for seawater desalination units in Bahrain or Australia, Mersen is investing in an expanding sector.



Our most valuable asset: our employees

Mersen's wealth relies on its employees' know-how, and on the extent and depth of their knowledge and technical skills, applied with confidence and precision. Above all, **we are an accumulation of talent driven by individual and collective passions.** Each person has a special place in the Group and plays a key role every step of the way.

To succeed, we must guarantee our employees' safety, develop their skills, and let them find fulfillment in their work.

We nurture this commitment equally in every corner of the world. With 6,000 employees dispersed on every continent in more than 40 countries, **we are a global Group on a human scale.** Our relatively modest size translates into a warm and welcoming workplace, and builds strong team unity and spirit. Strong relationships transcend borders and contribute to the value added of our development activities.



Mersen's DNA

- **Our main character traits**
Expert, inquisitive and innovative; entrepreneurial and pioneering; responsible and enthusiastic.
- **Our values**
A human dimension, a local presence on a global scale, continuous improvement, responsibility, profitable growth.

WE ARE A GLOBAL TEAM OF MEN AND WOMEN AROUND THE WORLD UNIFIED BY THE SAME VALUES...

People-focused human resources policy

Being gifted with such a wealth of human resources is a responsibility that Mersen assumes completely. Protecting, developing, uniting, and supporting the well-being of our employees are the keywords and foundations of the Group's truly people-focused HR policy.

• Protect

The Group is very aware that some occupations put its men and women at some level of risk. The Group's main responsibility is to ensure their safety. This ultimate obligation is the basis for all of our processes. It is the primary focus of our training programs.

• Support

When an employee joins Mersen, it is usually for the long term. Employees grow within the Group thanks to a competitive pay policy based on competence and performance. We also offer international mobility and training opportunities.

• Unite

Mersen is a multicultural group that keeps the exchange of ideas and its diversity alive by encouraging the mobility of its managers all over the world. We also give particular merit to women and to senior employees who have a critical role to play in passing their know-how onto future generations.

• Enhance well-being in the workplace

This is where our human capital philosophy shows all its meaning. At Mersen, the workplace is where every employee finds fulfillment and meaning. Mersen provides a nurturing environment that encourages trust and initiative thus increasing its ability to innovate.

A culture of initiative and trust

Mersen is a major Group that is solid, organized, and structured and that expands over a vast, worldwide network. But it is also a multitude of smaller entities that implement the Group's strategy with the greatest possible autonomy.

Organized in small units with a limited number of hierarchical levels, the Group has implemented a system of governance that has regularly received awards for its transparency and responsibility.

A globalization respectful of local cultures

Established in more than 40 countries, we offer a local presence almost all around the world. Our international expansion has always been our way of being close to our customers, right where they are, with their own projects. It is therefore a **globalization that we have actively pursued and not one that was forced upon us.**

That is perhaps why we are so well integrated around the world. The first rule to successfully establish locations abroad is to adapt to the country's culture. The second rule is to entrust the site's management to a local manager.

Innovation, our dominant gene

Innovation is engrained in our history and culture and, at Mersen it is above all the story of men and women whose expertise lives and grows in their pursuit of answers to these fundamental questions: **in which direction are the markets moving?** And what will that mean for our customers' requirements in the near or distant future?

New ideas are born as a result of our local customer contacts, our understanding of their challenges, and our watchful eye on the technological and structural aspects of the markets. These ideas will help our customers move forward while making their equipment safer and more energy efficient resulting in saving natural resources. Their equipment will become more competitive, easier to maintain, providing a longer life expectancy.

Global competitiveness and sustainable development are the two main objectives of our innovation policy. It is a commitment that sets us apart and gives us a lead in the market.



PHARMACEUTICALS AND FINE CHEMISTRY

CL-Clad® : noble and competitive

Tantalum, titanium and zirconium are noble metals and therefore expensive metals used in the pharmaceutical and chemical sectors because of their excellent anti-corrosive properties. In 2004, **Mersen patented a process that makes it possible to clad steel with thin layers of these noble metals.** This innovation helps the Group's customers to cut their costs through increased production capacity and improved safety in their installations.



ELECTRICAL CONTACTS

Very high-speed

A world rail speed record of 574.8 km/h. The TGV high-speed train that set this record on April 3, 2007 was fitted with a Mersen current collection strip specially designed with aerodynamic properties to ensure contact that can withstand an intense electric arc.

... AND THE SAME AMBITIONS: TO INNOVATE IN ORDER

TO SUPPORT OUR CUSTOMERS IN THEIR FUTURE ENDEAVORS,

A leader, and a partner of leaders

Our most important research partners are our customers. Our commitment to stand beside them takes a variety of forms, ranging from dedicated teams to full-scale co-development.

This collaborative core is surrounded by a fabric of close relationships with top-notch partners, including some of the most famous universities, engineering schools, and research institutes in the world (such as CNRS, ECA, Fraunhofer, Ines, Minatech, and Powertech...).

When knowledge takes shape

• Organization

Our R&D is organized around specialized laboratories that are coordinated by a cross-disciplinary steering committee. The communication channels are always open and active among the teams. To encourage an active sharing of knowledge, every year the Group sponsors a Development Day and an Innovation Challenge. These are two key events in the Group's calendar.

• Software tools

Sharing information is a constant goal. Mersen's know-how takes the form of two proprietary databases. For each specialty, a directory lists the in-house experts and the online library houses all documents that have been written on the subject.

• Technical tools

In order for this knowledge to take shape, tests are crucial. The Group's R&D equipment includes three test beds that can reproduce the most exacting conditions that our electrical systems could face. Our laboratories can also simulate any type of environment (extreme temperatures and humidity levels) to measure the life and performance of our carbon-based products.

ELECTRICAL PROTECTION

Combating solar panel voltage surges

Photovoltaic panels, characterized by direct current and very low voltages, have, until now, required fuses or circuit breakers serialization for voltage surge protection. Mersen has replaced them **with a single voltage surge protection device that can disconnect itself completely** and safely at the end of its useful life, despite low current.



HIGH PERFORMANCE GRAPHITE

A cylinder with record dimensions for photovoltaics

With a diameter of 1.5 meters and a length of one meter, it is **close to twice the size of what the competition can offer:** Mersen's isostatic graphite cylinder breaks all the records. It maintains all of its properties during operation, thanks to the combined efforts of the multinational teams. For the Group's customers, producers of polysilicon, the main ingredient in photovoltaic panels, it represents a vital means of producing more at lower cost.



Expertise at the heart of sustainable development

Responsible energy usage - Nowadays, it is critical to curb energy consumption by using more efficient systems. Energy efficiency at Mersen is a cross-disciplinary line of research for all our business activities, spanning both the electrical and materials fields.

By developing increasingly smart electrical contact and protection applications, we contribute to a tighter control of both energy production and energy consumption.

We are experts in thermal design and heat exchanges. We apply this know-how to the design of chemical equipment that curbs power consumption and recovers it at the end of the process.

Responsible material use - We make better use of materials by recovering them to the **greatest possible extent**. We process graphite, noble metals, and ceramics into higher-performance electrical or chemical equipment that can better withstand extreme conditions to **extend the equipment's useful life**.

Taking a lead

Mersen is committed to sustainable development and therefore needs to set an example in this area. And it has certainly done so, **scoring of 6.9 out of 10 in a 2009 CSR performance evaluation** including 8 out of 10 in the human resources section!

Human capital is indeed the foundation of the Group's commitment. Our environmental policy was originally intended to protect the Group's personnel. The Group is ISO 14001 and OHSAS 18001 (occupational health and safety) certified at its main sites and complies with the European REACH regulation.

Mersen uses ecodesign in product development with a software system that helps cut energy and material consumption.

After an initial carbon footprint calculation on a pilot site, the Group plans to perform thorough CF assessments on its principal sites around the world.



... A DETERMINED COMMITMENT TO SUSTAINABLE DEVELOPMENT

Mersen, helping to develop the industries of the future

Over the last ten years, Mersen has led a major R&D drive to develop solutions which, through technological breakthroughs and by virtue of their competitiveness, **contribute to the expansion of the principal industries in sustainable development**.

• Solar

What is the principal challenge facing the photovoltaic industry? Reducing polysilicon production costs. Mersen contributes directly to this goal by producing graphite equipment that resists corrosion and high temperatures. The Group also designs equipment to protect electrical installations in solar farms.

• Wind

From blade pitch controllers to the grid via generators, Mersen provides a complete range of solutions for wind turbines, including smart signal transmission systems, generator brushes and brush holders, fuses and cooling devices.

• Rail transportation

Pantograph, third rail shoes, traction motor brushes... today's train and tram renaissance needs new contact and electrical protection devices that guarantee reliability at very high speed, as well as complete safety in urban settings.

• Smart grid

Solar farms, wind farms... To connect installations that combine various levels of power which are often unstable, power grids are gradually becoming "smarter." Mersen contributes to this smart approach with its voltage surge protection equipment.

Nuclear power and water treatment: tomorrow's new growth sectors

Another solution addressing the increasing scarcity of fossil energies is nuclear power. It is attracting renewed interest, and Mersen is playing its part by providing components for auxiliary reactor circuits.

In another recent development, **the Group is designing dedicated materials for seawater desalination units** being built at several locations across the globe to meet increasing demand for potable water.





120

120 years of continuous innovation. As the industrial heir to two companies founded in 1891 and 1892, one of which patented the carbon graphitization process in 1893, the Group was built on innovation with and for its customers.



6,000

Approximately 6,000 employees put their skills and passion to work across the globe, representing more than 33 nationalities.

56

More than 56 production sites: a solid, extensive network that means the Group can guarantee unmatched delivery times on every continent.



50

50 patents filed since 1991 by the Group, not to mention the countless inventions developed by employees to take their skills and processes to new heights.



ISO 14001

ISO 14001, the environmental and quality standard governing the Group's main production sites the world over.

3000°

3000° Celsius, the temperature our graphite equipment is able to withstand.



45,000

45,000 volts, the voltage our electrical protection equipment is able to withstand.





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