



# **Global expert**

in electrical power and advanced materials, Mersen partners companies around the world that drive today's industry and shape tomorrow's society.

A committed partner and core technology provider.

— €879m in consolidated revenues in 2018

**\_\_\_6,900** employees

Present in 35 countries

# our goal is to help you meet the technological challenges

that drive you forward and that shape our world. Whatever the sector and whatever the stakes, we draw on a broad range of products and services to help you define and design custom-fit solutions and processes.

Day after day, we deliver world-renowned expertise in electrical power and advanced materials to industry groups looking to develop their activity and meet tomorrow's technological challenges.





# Creating collective value

Mersen's two specialist business divisions deliver expert solutions with the same exacting standards and focus for a range of different sectors including wind and solar power, electronics and fiber optics, rail, aerospace and aeronautics transportation, corrosive chemicals, process industries and more. We work hand-in-hand with industry manufacturers and operators to make tomorrow's solutions more efficient and more reliable. Wherever technologies are advancing and innovating, you'll find a little bit of Mersen.







# Solutions that make a difference

Pushing boundaries is second nature at Mersen. For more than a century, we have provided industry players the world over with innovation to **improve** their product performance and services. Innovation that meets the constraints of technological change as companies move further and faster. Whether you need to cut costs, streamline your efficiency and the useful lives of your consumables, or even respond to changing consumer habits and preferences and the boom in the green economy, Mersen has a full spectrum of innovation in the service of industrial performance.





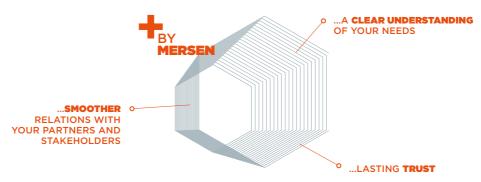


# A core provider

Creating value for our clients means understanding their needs, their challenges and their constraints. It also means understanding their environments, both geographical and competitive.

With 50 industrial sites in 35 countries, Mersen works side-by-side with its clients at the heart of its markets, developing strong ties to offer made-to-measure, high value-added solutions at every level. A relationship of trust in transforming challenge to opportunity.





# PERFORMANCE BY MERSEN

Efficiency
Competitiveness
Long life
Reliability
Protection

# A comprehensive offer

GRAPHITE
<b>SPECIALTIES</b>

ANTI-CORROSION EQUIPMENT

POWER TRANSFER TECHNOLOGIES

ELECTRICAL PROTECTION & CONTROL

SOLUTIONS FOR POWER MANAGEMENT

- Unique expertise in high-performance materials and solutions for high-temperature and extreme environment production or operation
- Graphite, carbon/carbon composite, carbon insulation, flexible graphite and silicon carbide (SiC) solutions for the process, aerospace, solar PV and electronics industry









NO. 2 WORLDWIDE
IN HIGH-TEMPERATURE
ISOSTATIC GRAPHITE
APPLICATIONS

ISOSTATIC AND EXTRUDED GRAPHITE



Graphite electrode for electrical discharge machining



Die for continuous casting of copper alloy, precious metals and cast iron



Support for hot-glass handling



Wafer holder for substrates in semiconductor manufacturing



Polysilicon manufacturing electrode

RIGID AND FLEXIBLE CARBON INSULATION



Rigid CBCF insulation for industrial furnaces



Soft-felt insulation for polysilicon furnaces



soft-felt cylinderform insulation for heightened performance



permeable electrodes for energy storage



Rigid CBCF insulation for high-temperature sintering furnaces

CARBON/ CARBON COMPOSITE



Brake disk for aircraft



Component support for high-temperature furnaces



Accessories

SSIC SINTERED SIC



Structural component for space and ground telescopes



Mirror for space and ground telescopes



Plate for continuous flow chemical reactors



Mirror and laser scanner for industrial applications

FLEXIBLE GRAPHITE



High-performance static graphite seals



Thermal protection and insulation



Dynamic graphite seals

# ANTI-CORROSION EQUIPMENT

- Design and manufacture of process equipment to resist corrosive environments in the chemicals industries: graphite, silicon carbide, noble metals (tantalum, zirconium), titanium, nickel alloys and fluoropolymers
- Maintenance services









NO. 2 WORLDWIDE IN GRAPHITE-BASED ANTI-CORROSION EQUIPMENT

ENGINEERING SYSTEMS



- HCI production
- HBr production
- Dilution and concentration of acids
- Other systems

HEAT EXCHANGERS



Block form:

- in graphite
- in silicon carbide



### Tubular form:

- in graphite
- in silicon carbide
- in tantalum
- in zirconium
- in titanium
- in nickel alloy

COLUMNS, REACTORS AND PRESSURE VESSELS



- In graphite
- PTFE lined
- CL-Clad\* tantalum cladding
- In zirconium
- In titanium
- In nickel alloy

PIPING, BELLOWS AND ACCESSORIES



- PTFE lined
- PFA lined
- In tantalum
- In zirconium

BURSTING DISKS



In graphite

- Technical solutions for motor applications and generators
- Customized solutions and dedicated enhancement and reengineering services
- On-site expert assessments
- Motor maintenance services









NO. 1 WORLDWIDE
IN BRUSHES AND BRUSH-HOLDERS
FOR INDUSTRIAL ELECTRIC
MOTORS

BRUSHES AND BRUSH-HOLDERS



For DC motors



For generators and alternators



For asynchronous motors



Brush-holders

SIGNAL AND POWER TRANSFER



For grounding devices



For industry

SLIP RING ASSEMBLIES



For generators and alternators



For asynchronous motors



For hydro power generators



For hoisting

CURRENT COLLECTORS



Pantograph strips



Third rail shoe



Sliding contacts

# ELECTRICAL PROTECTION & CONTROL

- A full range of fuses and fusegear systems and devices
- Surge protection systems and devices









NO. 2 WORLDWIDE IN INDUSTRIAL FUSES





Bladed fuses



HSJ high-speed fuses



Medium voltage fuses



Medium voltage controllable fuses

IEC FUSES AND FUSEGEAR



Helioprotection® gPV fuses



Helioprotection® NH fuses



Low voltage switches



DIN high voltage fuses

SURGE PROTECTION DEVICES



Surge protection devices



Outdoor LED lighting protection



IEC SPD pluggable



IEC SPD non-pluggable

POWER TRANSFER FOR RAIL VEHICLES



Earth return current unit



3<sup>rd</sup> rail current collector device



Fuse box



On-board switch

# SOLUTIONS FOR POWER MANAGEMENT

 Passive and hybrid components for high-performance power conversion systems and batteries and improved safety and reliability









NO. 1 WORLDWIDE
IN THE SUPPLY OF PASSIVE
AND HYBRID POWER ELECTRONICS
COMPONENTS AND BATTERY SYSTEMS

OVERCURRENT PROTECTION FOR SEMICONDUCTORS AND BATTERIES: HIGH-SPEED FUSES & HYBRID SYSTEMS









Cylindrical

PSC

Hybrid protective devices

COOLING SOLUTIONS FOR POWER ELECTRONICS



Air-cooled radiator



Embedded heatpipe radiator



Liquid cooled cold plate



Standalone heatpipes

BUSBARS



Concentrated package for traction drive



Power distribution system for frequency inverter



Smart monitoring busbar for battery packs



Backplane power distribution laminated busbar

CAPACITORS



Electrolytic



Polymer lining



Capacitor bank on laminated busbar





**6,500** employees in **35** countries

# A balanced Governance model

Mersen's Board of Directors and executive management are committed to acting in the best interests of the Group and its stakeholders and to upholding the highest standards of ethics and transparency.

# Ethical practices for an exemplary model

Mersen's Code of Ethics applies individually and collectively to all of the teams and officers that make up the Group's ecosystem around the world.

# A reference framework and commitment to progress

As a signatory of the United Nations Global Compact since 2009, Mersen policies and actions are guided by the organization's principles and directives.

# **Environmentallysound practices**

The Group pursues a collective and pragmatic approach involving all its employees, who are educated and receive training at every level of responsibility.



# **GROUP HEAD OFFICE**

### **MERSEN**

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# **REGIONAL HEAD OFFICES**

## **GERMANY**

Talstrasse 112 60437 Frankfurt/Main (Kalbach) Tel: +49 (0) 695 0090

# **CHINA**

Unit 4604, Park Place, No. 1601 Nanjing Road West, Shanghai 200040 Tel: +86 (21) 6135 6886

### **UNITED STATES**

### **ELECTRICAL POWER**

374 Merrimac Street Newburyport, MA 01950 Tel: +1 978 462 6662

## ADVANCED MATERIALS

400 Myrtle Avenue Boonton, NJ 07005 Tel: +1 973 334 0700

## **INDIA**

No. 5 Bommasandra Industrial Area - Annekal Taluk Bangalore, Karnataka - 560099 Tel: +91 803 094 6100

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Design & Production: côtécorp.



GLOBAL EXPERT
IN ELECTRICAL POWER
AND ADVANCED MATERIALS

