



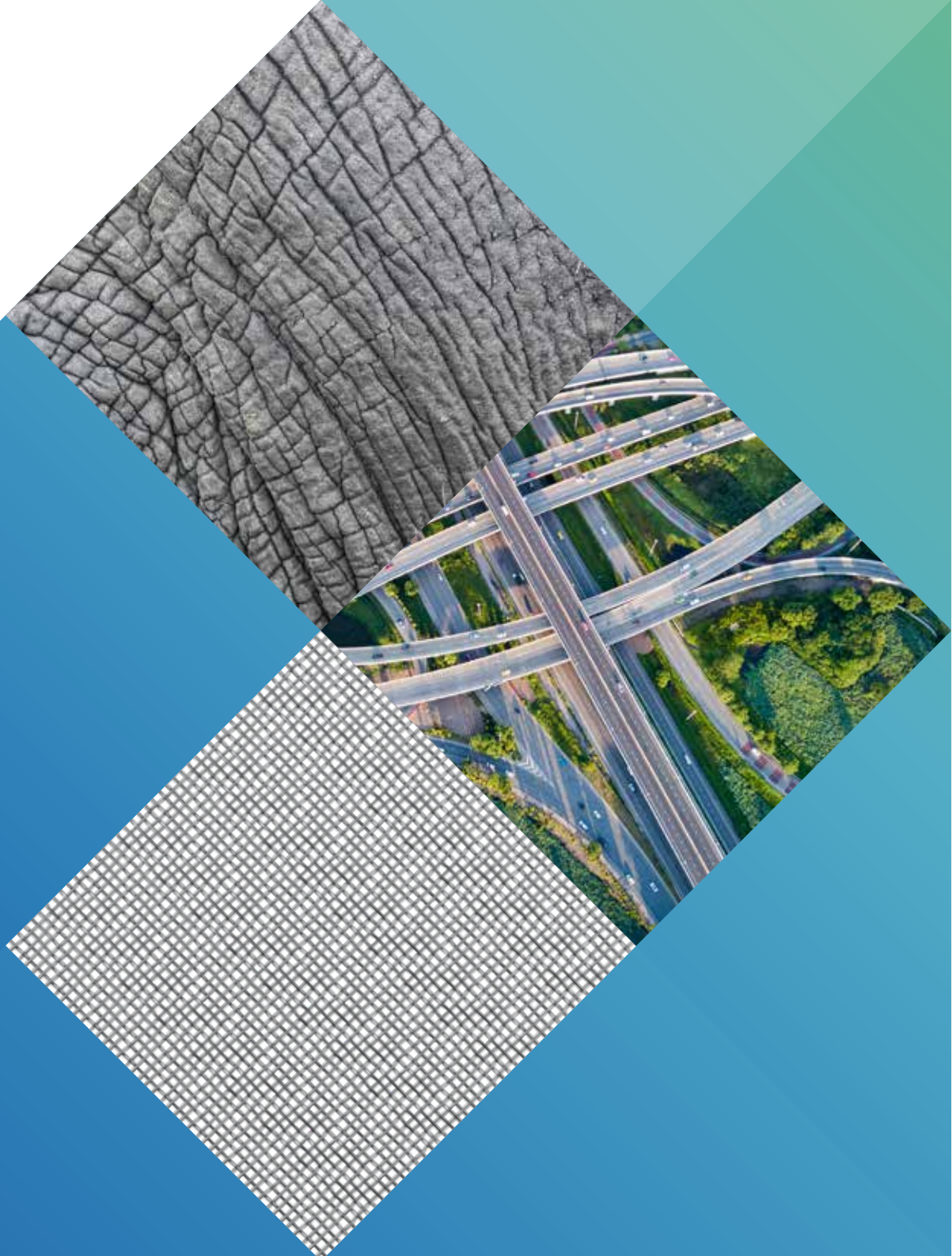
INDUSTRY AND FILTRATION

TECHNICAL MESH SOLUTIONS FOR THE **MOBILITY** SECTOR

FOR A HEALTHIER, CLEANER, SAFER WORLD

EXPERTISE FOR SUSTAINABILITY

MESH SOLUTIONS FROM THE TECHNOLOGICAL LEADER



Made-to-measure **Innovations**

GKD is the global technological leader for ultra-modern industrial weave and filtration solutions produced from metal and synthetic wires, as well as technical fibers – for all industrial applications. We employ innovative weaving technologies and the latest material simulation methods to produce efficient technical weaves, semi-finished products, components, and filter equipment that are optimally matched to the various requirements of mechanical process engineering. GKD offers technical mesh solutions for a broad spectrum of applications, including energy production, transport, storage, and use.

We support the sustainable transformation of industry with our deep expertise in optimizing already established technologies. Our customers benefit from tailor-made solutions, hands-on consulting, and worldwide service partnerships here. GKD also continuously develops new fields of application through advanced manufacturing technology and process expertise. We use our fabrics and meshes to create highly efficient systems, equipment, and components that integrate seamlessly into customer processes across industries. Thanks to our IATF and ISO certifications, our customers can also rely on certified quality worldwide.

Commitment to sustainability

At GKD, we believe that companies should strive to give back more to society, the environment, and the economy than they take. This is why we embrace and actively implement the net-positive concept, bringing a new strategic dimension to GKD's innate responsibility as a family business in the face of global challenges.

To expedite and accelerate transformation processes globally, GKD focuses on global requirements such as CO2 reduction, alternative drive technologies, green hydrogen, and clean water. Working with our own and external R&D

departments, we develop solutions that help to reconcile progress and growth with the goals of sustainability.

We also streamline our production processes and ensure compliance with statutory CSRD requirements. We are committed to social responsibility at all our locations, as well as to compliance with ethical standards – both within the company and in our dealings with customers and partners. With a dedicated sustainability strategy, GKD is pursuing its corporate vision worldwide: **FOR A HEALTHIER, CLEANER, SAFER WORLD.**





DRIVING A BETTER FUTURE

MESH SOLUTIONS FOR THE MOBILITY SECTOR

Manufacturers and suppliers in the automotive, rail, aerospace, and shipbuilding sectors operate in a highly dynamic environment. They are called upon to further optimize classic drive concepts and significantly reduce emissions in the mobility sector with new technologies based on hydrogen, alternative fuels, and electric mobility. In addition to the aspects of sustainability, efficiency and safety also have key parts to play.

Our technical weave solutions are used in parts and components that further optimize mobility technology in a wide range of application areas. This not only ensures greater efficiency and safety, but also compliance with strict environmental standards. In order to develop the best possible solutions and

bring them to market, even the smallest parts and components are important. Technical weaves from GKD are a good example of this. Thanks to their exceptional characteristics, they have a permanent place in the mobility sector and are required for numerous technical innovations, including drive technology, battery systems, interiors, and safety systems.

As the global market leader for metal, hybrid, synthetic, and spiral mesh solutions, GKD is supporting the sustainable transformation of the mobility sector with its expertise. Technical weaves from GKD can be found wherever the focus is on making our world healthier, cleaner, and safer.

OVERVIEW OF APPLICATION AREAS

Interior design

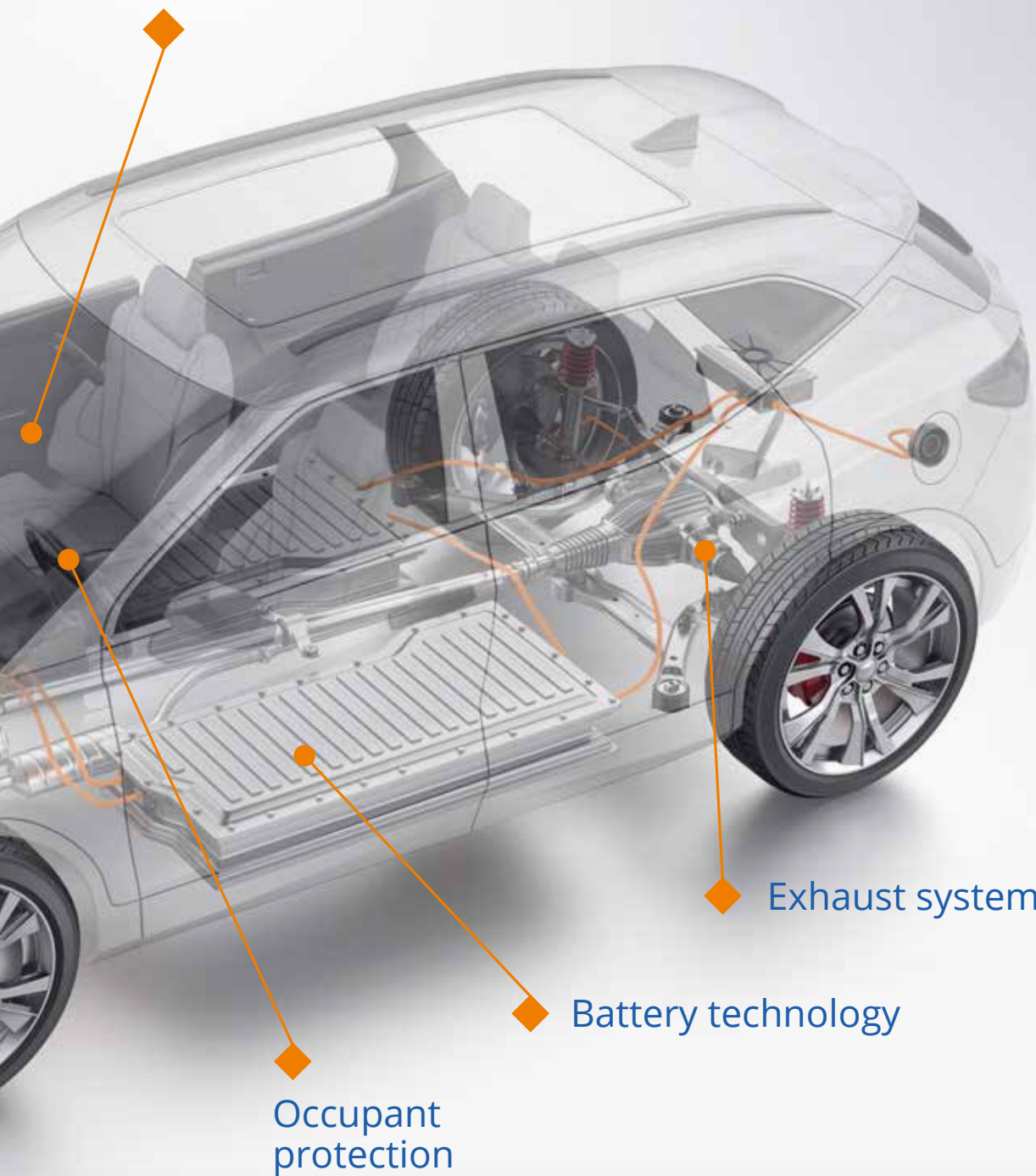
Drive technology

Chassis

Air conditioning



In-car-entertainment



Exhaust system

Battery technology

Occupant protection

SOLUTIONS

ELECTRIFIED DRIVES





Solutions for heat conduction, explosion protection, and shielding



Hot gas particle filters for battery valve protection

Partner for new mobility

The future of mobility is electric. Hybrids, as well as battery-powered and fuel-cell drives, are presenting new challenges for the automotive sector. More powerful batteries, shorter charging times, and technologies for contactless charging, for example, require increased protection against electromagnetic radiation for both occupants and components. Technical weaves have proven their value in these and other applications. EMI shielding produced from conductive and easily shapeable wire mesh helps ensure safety, everyday usability, and efficiency.

Versatile and highly effective

Technical weaves from GKD are used in these and other configurations and applications. In electric axles, specially developed filters ensure that the integrated oil circuit is effectively lubricated and cooled. Meshes are an indispensable explosion protection element in switch housings and the battery system. Manufacturers and development partners also benefit from the versatile technical solutions when addressing complex functional requirements, such as heat exchange in the battery system in the form of a heat transfer mat.

Applications

- ◆ EMI shielding
- ◆ Explosion protection for battery systems
- ◆ E-drive protection
- ◆ Thermal management / gap fillers
- ◆ Filters for electric axles

Meshes used

- ◆ Square weave
- ◆ Tela mesh
- ◆ Gekuplate
- ◆ Heat transfer mat

Benefits

- ◆ Transparency
- ◆ Compressibility
- ◆ Formability
- ◆ Media-resistant materials
- ◆ Conductive materials

SOLUTIONS

CONVENTIONAL DRIVES AND EXHAUST SYSTEMS





EGR filters and transmission oil filters

Greater efficiency – lower emissions

Despite the availability of alternative drive systems, the majority of vehicles today are still being powered by internal combustion engines. Effective and innovative technologies that help reduce both resource consumption and exhaust emissions are therefore all the more important.

Durable liquid filters support numerous functions and processes in modern combustion engine vehicles. The key for manufacturers and suppliers is to secure a wide range of filter media that are tailored specifically to the respective applications and therefore deliver the best results. The finest filtration and high throughputs, even when working with reduced filtration areas, open up optimization potential for oil and coolant circuits, injection systems, transmissions, hydraulic systems, and so on.

For optimum emission control

In the field of exhaust gas treatment, the automotive industry relies on highly effective filter media in order to comply with strict regulations, such as the Euro 7 emissions standard. But how can both the fuel consumption and CO₂ emissions of motor vehicles be further reduced without compromising performance? GKD's answer is Volumetric mesh, which the company developed for exhaust gas aftertreatment (EGR filters/POC) and which protects downstream components from damage. In addition to this, GKD filter media are used in combustion chambers and gas tanks, where they offer protection from particulate matter.

Applications

- ◆ Injection systems
- ◆ Valve train (valve protection)
- ◆ Transmission oil filters and oil suction filters
- ◆ Solenoid valve protection
- ◆ Piezo filter electrodes
- ◆ Exhaust gas recirculation and exhaust gas filtration

Meshes used

- ◆ Square weave
- ◆ Long-meshed and broad-meshed weaves
- ◆ TELA mesh
- ◆ Optimized dutch weave
- ◆ Plain dutch weave (PDW)
- ◆ Volumetric mesh

Benefits

- ◆ High dirt holding capacity
- ◆ High throughput rate
- ◆ Low pressure loss
- ◆ Precise filtration rates
- ◆ Temperature-resistant, corrosion-resistant, and media-resistant materials
- ◆ Low space requirement

SOLUTIONS

CHASSIS AND BRAKE SYSTEM





Filters for hydraulic and brake systems

Greater safety thanks to highly effective mesh

Pneumatic suspension

Chassis with air suspension offer unparalleled comfort. Air is compressed by an on-board compressor and then stored in a tank. The compressed air is then channeled into air springs, which are textile-reinforced rubber vessels. Secure, continuous, and low-maintenance operation of these systems largely depends on ensuring good compressed air quality. This is achieved with pneumatic mesh filters from GKD that effectively keep out contaminants. GKD filters are matched individually to the requirements of manufacturers.

Brake systems

Safety-relevant systems such as brakes need to be extremely resilient and robust. Our filtration meshes ensure that brakes remain efficient throughout their life. When brakes are applied, fine dust particles are produced, which the brake dust particle filters from GKD then reliably retain. This supports a consistently high braking effect with minimal dust generation. GKD has developed a special nonwoven for this specific purpose. GKD filters are also used in liquid filtration for brake systems. The GKD filter solutions reliably filter out particles in the brake fluid reservoir, so that they cannot find their way into the brake master cylinder, where they could lead to brake failure.

Applications

- ◆ Hydraulic systems
- ◆ Brake systems

Meshes used

- ◆ Optimized dutch weave
- ◆ Porometric mesh
- ◆ Square weave
- ◆ TELA mesh

Benefits

- ◆ High dirt holding capacity
- ◆ Low pressure loss
- ◆ Precise filtration rates
- ◆ Temperature-resistant materials
- ◆ Media-resistant materials
- ◆ Low space requirement
- ◆ Corrosion-resistant materials

SOLUTIONS

BODYWORK AND INTERIOR



Where function meets design

Two key aspects come together in vehicle interiors: ensuring an appealing design, while at the same time guaranteeing maximum possible protection for the occupants. The main aspects with airbags are that they must inflate within a fraction of a second and then quickly deflate after impact, so that the gas can also escape quickly and the occupants can move around freely again. This is where mesh from GKD comes to the fore. When triggered and inflated, gas flows through filtration mesh and into the airbag. Any particles are removed here, and the air is also cooled at the same time. GKD high-performance meshes are also used in the filters of HVAC units fitted in vehicles, where they filter the air and remove both pollen and dust.

Ensuring good sound and an elegant look

Wire mesh from GKD ensures good sound as a component of in-car entertainment systems. As electronic components, they improve sound distribution and also protect loudspeakers from external influences. Wire meshes are also suitable for a wide range of applications in the field of interior design. Formable metal wire and hybrid mesh types allow the creation of cockpits with elegant lines and an exceptional structure.

Applications

- ◆ Airbag filters
- ◆ Burner screens for auxiliary heating systems
- ◆ Rectifiers for heat distribution in heating systems
- ◆ Interior applications
- ◆ In-car entertainment
- ◆ Interior design

Meshes used

- ◆ Square weave
- ◆ Volumetric mesh
- ◆ Hybrid mesh
- ◆ TELA mesh

Benefits

- ◆ High dirt holding capacity
- ◆ Low pressure loss
- ◆ Heat-resistant materials

PRODUCTION

HIGHEST STANDARDS



Benefits

- ◆ Process and requirements analyses with material simulation tools (GeoDict/OpenFOAM)
- ◆ Consultation on the choice of material
- ◆ Application optimization and customized component design
- ◆ Continuous analysis and further development
- ◆ The latest manufacturing methods and leading production standards
- ◆ Certified know-how and decades of expertise

From weaving to **finishing**

Weaving, cutting, cleaning, rolling, punching, finishing, and much more. With the latest looms and manufacturing machines, GKD produces the full range of industrial meshes and systems made of metal, synthetics, and technical fibers. Always leading with the unique requirements of customers in mind. Adopting a step-by-step approach, we first analyze the demands on the material and the type of application, and then optimize processes and services for greater efficiency and sustainability in production.

This eye for detail, many years of development excellence and process expertise as well as our consistent cost-benefit orientation are what make GKD a sought-after partner around the world. Products from GKD are manufactured to the highest standards – all the way up to production in line with clean room standards.



Guaranteed and **certified quality**

GKD excels not only at production. We thoroughly inspect all of our meshes and associated components in our own laboratory, as the quality products from GKD need to precisely match the client's desired specifications. That's why our physical and technical laboratory conducts tests in the following areas:

- ◆ Product development
- ◆ Initial sample inspection
- ◆ Inspection in the event of damage
- ◆ Inspection in the event of a complaint
- ◆ Customer-specific testing
- ◆ Quality assurance during the production process

The focus of all testing scenarios is on providing value for the customer. Our laboratory experts have the best material and testing expertise, work with the latest laboratory technology, and network constantly with other professionals in the fields of inspection technology and science. They monitor the entire lifecycle of GKD products.

- ◆ **Testing procedures (selection):**
 - Mechanical and physical testing
 - Chemical testing
 - Quality-assurance mesh testing



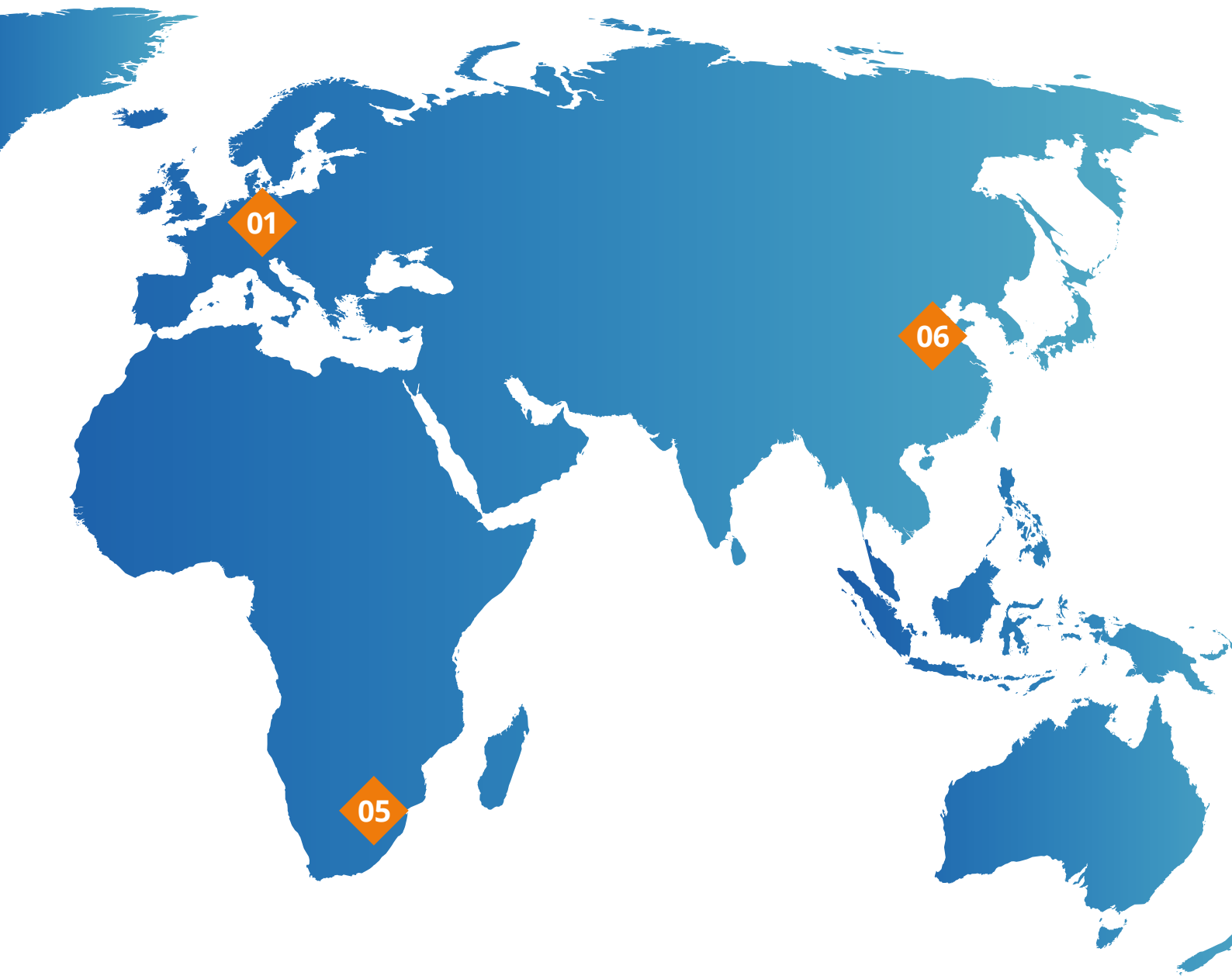
INTERNATIONAL

GLOBALIZED SUPPLY CHAINS AND MANUFACTURING

With more than 800 employees worldwide, the GKD Group is a leading international technology and service company. The company's headquarters are located in Düren, Germany. GKD also operates sites in the USA, Chile, South Africa and China. Sales offices in France and Spain as well as worldwide representatives ensure that we are close to the customer all over the world. Our understanding of service includes developing individual solutions for every single customer. GKD produces around the world but relies locally on short distances. Globalized supply chains and production platforms ensure delivery reliability, enabling us to respond promptly and flexibly to customer needs. Thanks to precise logistics, the use of recycled materials, resource-efficient production processes, and the development of solutions that help customers achieve their sustainability goals, GKD is expediting the sustainable transformation in keeping with our own guiding principle:



FOR A HEALTHIER, CLEANER, SAFER WORLD



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- 02** GKD USA Cambridge (MD)
- 03** GKD USA Star City (AR)
- 04** GKD LatAm Santiago de Chile
- 05** GKD South Africa Johannesburg
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