Technology made in Germany
CONTENT

- WIELAND Dental+Technik ...........................................p. 4
- The power of innovation ...........................................p. 5

DENTAL DIVISION
- Gold – a core competence ........................................p. 7
- High-performance ceramic for natural-looking teeth ..........p. 8
- Ceramic materials for supreme aesthetics .......................p. 9
- Your full-service supplier ............................................p. 9

PRECIOUS METAL DIVISION
- The whole world of Precious Metal ................................p. 10
- Perfect surfaces through electroplating ..........................p. 11

RECYCLING DIVISION
- Homogeneous catalysts from WIELAND .......................p. 12
- Recycling precious materials ......................................p. 13
- Protecting the environment ........................................p. 13
- Quality brings security .............................................p. 14
- Innovation needs tradition .......................................p. 15
Ever since Dr. Theodor Wieland founded the company as a family business in 1871, the WIELAND name has represented a unique combination of tradition and innovation as well as high-quality products and the best in customer service.

Today we have a staff of more than 300 employees and are a market leader in products and services for the dental and precious metal industries. Our production facilities are located in Pforzheim, Eiterfeld and Rosbach.

Through a combination of consistent market focus and technical innovation we have been able to considerably strengthen our company’s market position both at home and abroad. This has involved establishing subsidiaries for the sale of dental products, for example in Italy, Austria, the USA and China.

At WIELAND Dental+Technik we are proud of our competent, dedicated staff, who understand how to exploit the synergy effects of our differing but interrelated product lines within our flexible, customer friendly structure.

One major aspect of our business focuses on products and services in the field of high-quality dental restorations. From the wi.tal® implant system and precious metal dental alloys, the AGC® electroforming system, the innovative ZENOTEC CAD/CAM system for the automated fabrication of ceramic frameworks to the appropriate veneering ceramic for each application, WIELAND Dental+Technik caters for all needs from the root to the crown – all from a single source supplier.

Other key business areas include the production of semi-finished precious metal products for technical and decorative applications, soldering alloys and special alloys, precious metal electrolytes and solutions, as well as precious metal refining, recovery and hazardous waste management.
All good things start with an idea. It takes ingenuity to transform these ideas into products which enhance our customers’ success. In a global economy a company can only survive if its products, techniques and services are constantly updated and able to compete with the best in the field. At WIELAND Dental+Technik our qualified materials scientists, chemists and physicists, mineralogists and biologists pool their expertise with that of engineers and technicians. Add to this our wealth of technical resources and you have a combination second-to-none. More than 10% of our staff are involved in research and development. Our industrial division is the market leader in the development of customised solutions for precious metal semi-finished products, precious metal electroforming and precious metal recycling.

This is the only way to effectively meet the challenges presented by rapidly changing markets and technologies. Especially in the areas of materials and production engineering, radical and far-reaching changes are under way in the dental industry. As a result of recent developments in CAD/CAM technologies, materials which could hitherto not be processed in the dental laboratory are now available to patients. For dental technicians, the associated structural changes are resulting in a shift away from the traditional manual fabrication techniques towards new industrial production processes.

We have risen to meet this challenge and support our customers through innovative products and years of experience in the essential process of change management.
GOLD – A CORE COMPETENCE

WIELAND has been making dental alloys since 1920. Today, this is still one of the core competences of our company.

Since the end of the eighties we have been using state-of-the-art continuous casting processes to produce highly homogeneous and extremely pure alloys with very different components. This enables dentists and dental technicians to choose from a wide variety of alloy types with a broad range of properties in a range of price classes. This broad product range caters for the individual requirements of all types of dental work involving permanent restorations.

One of our most successful products is the AGC® electroforming system which enables dental restorations to be manufactured from pure gold and ceramics through the application of electroforming technology. We are the world leaders in this area of technology, which is now to be found in all modern dental laboratories.
In the field of medical engineering the challenges are considerable and the technologies used must meet the highest standards. In particular, the material zirconium dioxide has the potential to replace traditional materials in many areas. This material is a high-performance ceramic which has found applications in the aerospace industry and is also used for physically demanding hip replacements. It is only in recent years that computer-aided manufacturing processes have made it possible to process this high-end material to meet the exacting individual requirements of dental restorations.

Here too, WIELAND has assumed the position of market leader and with its ZENOTEC system offers a comprehensive CAD/CAM system for processing this future-oriented material.

By linking and networking the key elements of scanner, CAD design software, milling machine and all relevant materials, we enable our customers to deliver state-of-the-art dental restorations world wide. Furthermore, the ZENOTEC system offers dental laboratories the advantages of cost-effectiveness, security for the future and innovation. Dental technology made in Germany!
CERAMIC MATERIALS FOR SUPREME AESTHETICS

Our strategy in the dental sector is based on gold and ceramic materials. Ceramics can be used as the framework material for crowns or bridges, as well as for the aesthetic veneering of metal or ceramic substructures.

With the X-Type ceramics WIELAND has created a new generation of ceramic materials. The innovative microstructure of these materials is absolutely unique. Four different veneering ceramics are available for veneering substructures made of pure gold, precious metal alloys, aluminium oxide or zirconium dioxide: REFLEX®, HITEK®, ALLUX® and ZIROX® excel through their standardised build-up and shade systems. This technique enables absolutely identical colour and shade matching to be achieved with ease, even on vastly differing substructure materials.

WIELAND DENTAL CERAMICS

WIELAND Dental Ceramics GmbH was founded at the end of 2001 in Rosbach-Rodheim as a subsidiary of WIELAND Dental+Technik. The company commenced operations at the beginning of 2002 and has since grown to over 30 employees.

The company’s goal is the development and production of veneering ceramics and ceramic systems that will set benchmarks in materials technology and aesthetic standards. Dental technicians, dentists and schools of dentistry collaborate closely in this research.

YOUR FULL-SERVICE SUPPLIER

To complete our portfolio of dental products we also supply investment materials, waxes, solders and equipment. This makes WIELAND a full-service supplier with a range of products and services ‘from the root to the crown’.
THE WHOLE WORLD OF PRECIOUS METAL

In the precious metals division, everything revolves around the most precious materials in the world: gold, silver, platinum, palladium, rhodium and ruthenium. At WIELAND Dental+Technik we turn these materials into alloys and semi-finished products such as electrolytes for decorative and functional electroplating. And of course, as a one-stop shop for precious metal products, we also offer our customers additional services such as precious metal trading, accounting and recycling.

We also produce alloys and semi-finished products for applications in medical technology, glass processing and finishing, electronics and electrical engineering as well as in mechanical engineering and jewellery production.

To this end we are equipped with the latest melting and forming plants. One particular technical highlight is our continuous vacuum casting plant for the carbon-free casting of high-alloy platinum group and palladium alloys in a vacuum or inert gas atmosphere. In addition we have a further continuous casting unit plant which we can cast quantities to order from a few to several hundred kilograms.

For the chipless cold forming of alloys we have a number of high-precision roll stands in a variety of sizes to cater for different requirements. For chip-removing forming processes we use state-of-the-art CNC turning and milling machines.

These technical facilities, combined with our many years of specialised expertise enable us to supply special alloys composed to meet our customers’ individual requirements and in the forms and quantities required, quickly and efficiently.
WIELAND Dental+Technik also supplies precious metals in liquid form as electrolytes for electroplating and electroforming. In this area our core competences cover the fields of decorative and functional electroplating.

Our range of electroplating products includes the outstanding rhodium solutions, which we can supply either as a traditional immersion bath or as a special electrolyte for the extremely economical fibre electrode system. The hallmarks of this electrolyte are the high-lustre brilliant white layer of pure rhodium which is deposited and the extreme durability of the coating. Our Rhodinette fibre electrode plating system has become the worldwide standard for this technology.

For the surface treatment of titanium in medical applications, we manufacture a range of pickling and etching solutions and also electrolytes for the anodic oxidation of pure titanium and titanium alloys.

To ensure that the best possible results are obtained from our electrolytes, we also supply the necessary devices, equipment and accessories.

We work closely together with our customers to find solutions to their problems by cooperating on the development of customised electroplating processes. Waste electrolytes and solvents are disposed of using our environmentally safe recycling and reprocessing techniques.
When the catalyst and the reactant of a chemical reaction are in the same phase (e.g. liquid), the process is referred to as homogeneous catalysis. The substances used as catalysts accelerate the required reaction or make it possible in the first place without themselves being used up. For this process customised compounds of platinum group metals (Pt, Pd, Rh, Ru, Os) or compounds with a gold or silver base are often used as homogeneous catalysts.

In addition to homogeneous catalysts with a precious metal base, WIELAND’s recycling and chemicals division also manufactures precious metal solutions to our customers’ specifications for use in the chemical industry, decorative plating and finishing and for applications in the electronics industry.
RECYCLING PRECIOUS MATERIALS

Precious metals are so valuable that even the smallest amount of precious metal waste needs to be collected for recycling. This has always been the case and in the precious metals industries great importance is attached to the notion of sustainability. It would require 3,000 kg of natural ore to be mined and processed to produce the same amount of precious metal as can be recovered from just one kilogram of secondary raw materials. Recycling therefore helps to protect the environment.

WIELAND uses state-of-the-art reprocessing technologies to recycle almost any waste material containing precious metal and returns the precious metals as fine metals, alloys or precious metal compounds. Alternatively, we can purchase the precious metal content at the current price.

PROTECTING THE ENVIRONMENT

Our commitment to environmental protection goes beyond merely fulfilling our legal obligations. That is why we continuously strive not only to improve our existing disposal and recycling technologies, but also to develop new ones. Our patented detoxification process makes refining at WIELAND particularly safe for the environment. Our customers also benefit from this specialised expertise. As a certified waste disposal and reprocessing company we also provide a full service, from consultation, packaging and transport to the environmentally safe disposal of hazardous waste materials requiring special supervision.

For the good of the environment.
QUALITY BRINGS SECURITY

QUALITY CONTROL IS NOT THE BE ALL AND END ALL, BUT WITHOUT QUALITY CONTROL IT WOULDN'T BE ALL FOR NOTHING

At WIELAND Dental + Technik quality is not achieved by testing but is incorporated into the production process from the very beginning. This is guaranteed by our integrated management system comprising quality management, environmental management, and health and safety management systems. In order to maintain our high standards in the long term we have also developed efficient quality control and documentation procedures.

Regular external audits ensure that our integrated management system is properly maintained and constantly under development. Corresponding certificates are issued to this effect.

This provides greater security not only for us but for the benefit of all our customers.
WIELAND Dental+Technik is located in one of the most important technology zones of Southern Germany – between Karlsruhe and Stuttgart.

- **1871**
The business is founded in Pforzheim with a staff of 13 by the chemist, Dr. Theodor Wieland.

- **1920**
The manufacture of semi-finished products such as wires and sheet metal for the jewellery industry commences. Production of electrolytic baths, solders, and fluxes begins.

- **1927**
The Nobel Prize for chemistry is awarded to Professor Heinrich Wieland, son of the founder, Dr. Theodor Wieland.

- **1931**
Development of low-cost gold-free alloys which are electroplated in the mouth using the “MIDAS“ portable anode.

- **1945**
90 % of the company is destroyed during the air raid on Pforzheim. The whole of the precious metal stock is confiscated.

- **1968**
Items of dental equipment and dental electroplating appliances are added to the product range.

- **1976**
Development of the first gold-coloured ceramic alloy for dental restorations.

- **1986**
The first AGC® crown produced by WIELAND is inserted at the University Clinic in Tübingen.

- **1988**
Patent application for a plant and treatment process for waste waters containing nitrite.

- **1993**
Patent application for a plant and treatment process for breaking down solid complexing agents in aqueous solutions.

- **1996**
125th anniversary of the founding of the company.

- **1998**
Manufacturing commences of extremely pure sputter targets and sputtering materials for thin film technology.

- **2001**
Restructuring of the company: The BWK UnternehmensBeteiligungs-Gesellschaft, Stuttgart, increases its shareholding in the company to 40 %.

- **2002**
A new subsidiary, WIELAND Dental Ceramics GmbH is established.

- **2003**
Launch of the innovative Nanoleucite™ ceramic REFLEX®.

- **2004**
Production and supply of homogenous catalysts begin.

- **2004**
Production commences of master alloys for jewellery manufacture.

- **2005**
The subsidiary WIELAND i-mes Dental Solutions GmbH is established. Launch of the ZENOTEC CAD/CAM systems for the manufacture of dental restorations from zirconium dioxide.

- **2005**
Launch of the innovative ceramics ALLUX® and ZIROX®.

- **2006**
The subsidiary WIELAND Dental Implants GmbH is established. Launch of the wi.tal® implant system.

- **2006**
Restructuring of the company: BWK UnternehmensBeteiligungs-Gesellschaft, Stuttgart acquires a further 20 % of the stock of WIELAND.
As a major supplier of dental system solutions, WIELAND embodies both tradition and progress in matters of dental products and technology. Since our company was founded in 1871, we have stayed true to our corporate philosophy of combining tradition, innovation and quality with the best in customer care. Today, our core competencies and key strengths lie in the forward-looking integration of technologies and materials for dental prosthetics. This ensures that patients can trust in the quality of their dentures, and our partners in dental practices and laboratories can continue with confidence on the path to digitalisation and greater competitiveness.

WIELAND offers a wide range of products and services from CAD/CAM technologies and dental alloys to veneering ceramics and electroforming. Thanks to our worldwide presence and international network of regional branches and local agencies, WIELAND is never far away, and your contact person can always be located via the Internet.