

Innovative Coating Solutions for the Dental Industry

Precision, Performance and
Biocompatibility



Medical



Advanced Surface Coatings for Superior Dental Applications

Dental Screws

Key Advantages

- Reduced torque during screw insertion ensures smoother assembly and minimizes friction for precise placement
- Easy and safe removal without risk of breakage or seizure, enhancing reliability
- Cost-efficient maintenance through faster and easier exchange of screws
- Enhanced wear resistance for long-lasting performance
- Biocompatibility for safe and effective integration

Dental Abutments

Key Advantages

- Superior aesthetics with anti-reflective and color-matching coatings
- Improved resistance to bacterial adhesion, reducing infection risks
- High mechanical strength and durability
- Scratch-resistant surface for long-term visual appeal and function

Dental Instruments and Tools

Key Advantages

- Prolonged tool life through exceptional wear and abrasion resistance
- Enhanced identification with color coding enables easy and efficient tool differentiation
- Sterilization-resistant coatings ensuring long-term usability and safety



Drills



Abutments



Torque tools



Implants



Screws

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BALIMED™	Coating material	Hardness (HV 0.05)	Coating colour	
A	TiN	2,500	Gold	
ALTINA	AlTiN	3,300	Black	
ANTHRACITE SATIN	AlTiN	2,000	Black/Anthracite	
ARGENTA	TiNAg	2,500	Gold	
C	a-C:H:W (WC/C)	1,000 – 1,200	Grey	
CNI	CrN	1,750	Silver	
DLC	a-C:H	2,000 – 2,500	Black	
DLC DEEP BLACK	a-C:H	1,000 – 1,500	Black	
DLC STAR	CrN / a-C:H	2,000 – 2,500	Black	
FUTURA	TiAlN	3,300	Bronze	
TICANA	TiCN	3,500	Rose	
ZIRCONA	ZrN	2,000 – 2,500	Pale gold	

All given data are approximate values and they depend on application, environment and test condition.

All our BALIMED® coatings meet the highest industry standards and hold the following specific medical certification:

Cytotoxicity

MEM Elution, 72 hours (according to USFDA 21 CFR Part 58)

Sensitisation

Maximisation, Magnusson_kigman Method (according to ISO 10993)

Irritation

Intracutaneous Reactivity (according to ISO 10993)

The innovative BALIMED® PVD coatings from Oerlikon Balzers show resistance to repeated autoclave and cleaning cycles.

High-end coatings for improved productivity and outstanding surface quality in dental machining

Dental technology requires maximum precision while working with materials that are difficult to cut, placing high demands on microtools. Applying advanced coatings is an effective way to significantly reduce the resulting tool wear and production costs. With tailored coating solutions from

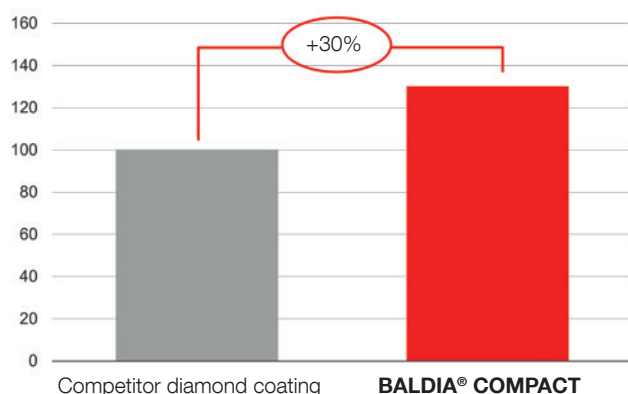
Oerlikon Balzers, dental laboratories benefit from:

- Outstanding abrasive wear resistance resulting in extended tool life
- Highest surface finishing accuracy
- Faster cutting speeds and increased productivity

Diamond coatings: The preferred choice for machining zirconia

Diamond is the hardest known material, making diamond coatings ideal for machining abrasive dental materials.

Tool service life (hours)



Dental micro end mill

Tool:	Tip Ø1 Shank Ø4 Lg 60 mm, Carbide TSF22
Workpiece:	Dental zirconia crown (ZrO ₂)
Cutting data:	Dry N = 30,000 rpm V _f = 1,200 mm/min A _p = 0.4 mm
Source / Customer:	Ziacom Medical S.L.
Benefit:	The BALDIA® COMPACT diamond coating proved to be the preferred solution for milling zirconia, with a 30% increase in tool life.

Optimum coatings for high-performance materials in dental technology

Prosthesis	Recommended Coatings
Zirconia / Glass Ceramic	BALDIA® COMPACT
Chrome Cobalt / Titanium	BALIQ® TISINOS PRO
Wax, PMMA / PEEK	BALINIT® MAYURA

Experience the next level of dental technology.
Contact us!

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