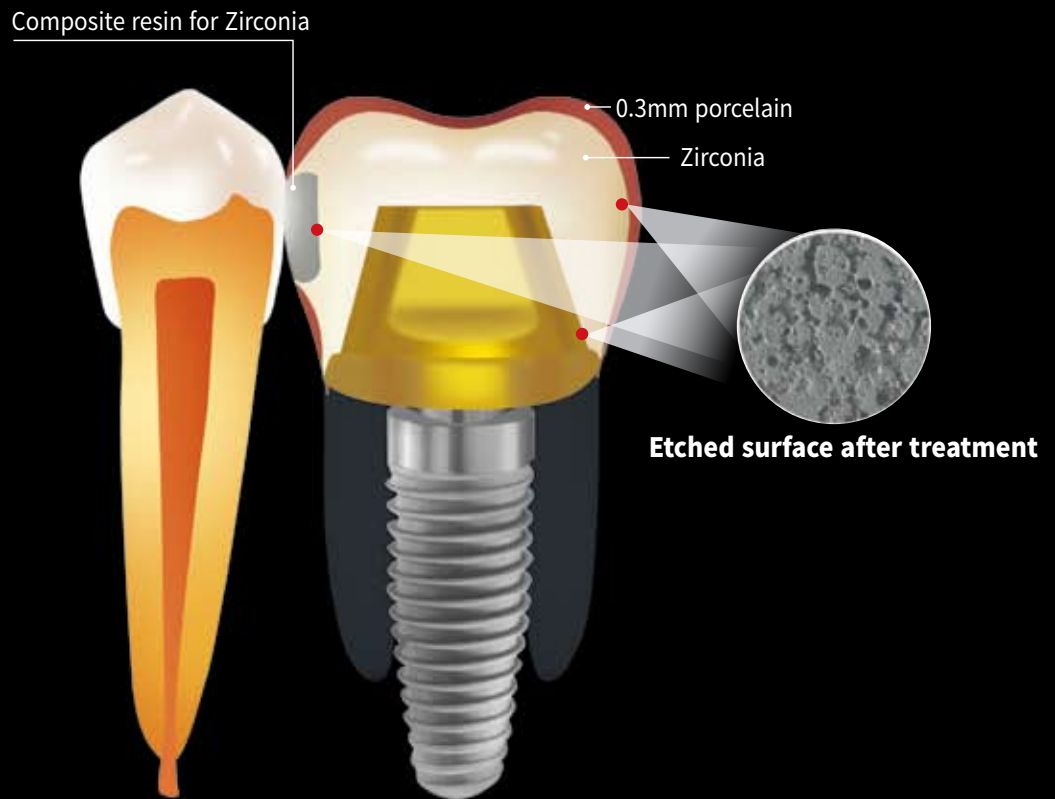


The world's first etching technique for zirconia crown.

New Etched Full Zirconia system

ZIRCOS-E[®]

Zirconia Etching Solution - E



Certificate of Authenticity

Bioden, in collaboration with KICET (Korea Institute of Ceramic Engineering & Technology) have developed Zircos-E crown which is a full zirconia crown in hand by our zirconia etching solution.)

 **BIO DEN CO., LTD.**
BIO DEN

Zircos- E etching solution preventing Implant contact loss. Zircos-SC Crown (Smart contact)

Composite resin for Zirconia



Etched surface after treatment

What is Zircos- SC crown?

The Application of our etching solution and composite resin for zirconia is solution for the problem of contact loss with implant crown.

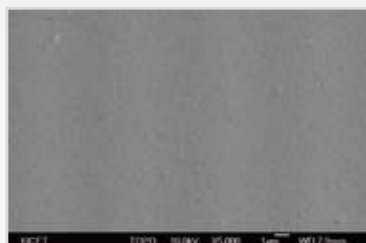
Certificate of Test					
KICET		Certificate No. : 2014-0282		KICET	
*1. Digital road 21, Guseong-gu, Seoul, Korea *2. Tel. +82-51-500-2100, Fax. +82-51-500-2101					
1. Client * Company/Name : MAC DENTAL CO., LTD. / Chang-tack Lee * Address : #9-214, 215 SK Twinstar Tower, Gaseo-dong, Gyeongsan-gu, Seoul, KOREA * Date of Report : Jan. 22, 2014					
2. Use of Report : Quality control					
3. Test Sample : Zircos-E-Disk and other 3 Case					
4. Date of Test : Jan. 22, 2014 ~ Feb. 03, 2014					
5. Test method used : KS L 1591 : 2013					
6. Testing Environment * Temperature : 17°C ± 1°C , Relative Humidity : 24% R.H. ± 1% R.H.					
7. Test Results					
Sample name	Item	Results	Test Method	Remark	
Zircos-E-Disk	Bonding strength (MPa)	1	1.270	KS L 1591 : 2013	Customer Level 95%
		2	1.240		
		3	1.250		
		4	1.270		
		5	1.260		
		6	1.280		
		7	1.290		
		8	1.270		
		9	1.250		
		10	1.260		
		average	1.258 ± 0.02		
Affirmation		Tested by Name : K. Y. Kim	Technical Manager Name : Z. H. Choi		
Feb. 03, 2014					
Korea Institute of Ceramic Engineering & Technology					
*14-PR-02-CER-02					

Certificate of Test					
KICET		Certificate No. : 2014-0282		KICET	
*1. Digital road 21, Guseong-gu, Seoul, Korea *2. Tel. +82-51-500-2100, Fax. +82-51-500-2101					
1. Client * Company/Name : MAC DENTAL CO., LTD. / Chang-tack Lee * Address : #9-214, 215 SK Twinstar Tower, Gaseo-dong, Gyeongsan-gu, Seoul, KOREA * Date of Report : Dec. 09, 2013					
2. Use of Report : Quality control					
3. Test Sample : Surface Etched Zirconia					
4. Date of Test : Dec. 09, 2013 ~ Dec. 17, 2013					
5. Test method used : Presented by customer					
6. Testing Environment * Temperature : 25°C ± 1°C , Relative Humidity : 22% R.H. ± 1% R.H.					
7. Test Results					
Sample name	Item	Results	Test Method	Remark	
Zircos-SC	Bonding strength (MPa)	1	1.388	KS L 1591 : 2013	Customer Level 95%
		2	1.130		
		3	1.038		
		4	1.188		
		5	1.260		
		6	1.270		
		7	1.027		
		8	1.161		
		9	1.400		
		10	1.099		
		average	1.228 ± 0.182		
Affirmation		Tested by Name : K. I. Cho	Technical Manager Name : J. H. Park		
Dec. 17, 2013					
Korea Institute of Ceramic Engineering & Technology					
*14-PR-02-CER-02					

Certificate of Test					
KICET		Certificate No. : 2013-0420-1		KICET	
*1. Digital road 21, Guseong-gu, Seoul, Korea *2. Tel. +82-51-500-2100, Fax. +82-51-500-2101					
1. Client * Company/Name : MAC DENTAL CO., LTD. / Chang-tack Lee * Address : #9-214, 215 SK Twinstar Tower, Gaseo-dong, Gyeongsan-gu, Seoul, KOREA * Date of Report : Dec. 09, 2013					
2. Use of Report : Quality control					
3. Test Sample : Surface Etched Zirconia					
4. Date of Test : Dec. 09, 2013 ~ Dec. 17, 2013					
5. Test method used : Presented by customer					
6. Testing Environment * Temperature : 25°C ± 1°C , Relative Humidity : 22% R.H. ± 1% R.H.					
7. Test Results					
Sample name	Item	Results	Test Method	Remark	
Surface Etched Zirconia	Bond strength (MPa)	20 ± 1		Presented by customer	
Affirmation		Tested by Name : K. I. Cho	Technical Manager Name : J. H. Park		
Dec. 17, 2013					
Korea Institute of Ceramic Engineering & Technology					
*14-PR-02-CER-02					

Certification of bonding strength after etching.

Zircos-E[®] surface treatment



Before Etching



After Etching

SEM by KICET Ph. D Kim



Full zirconia



Zircos-E

Photo by Doctor of Dental Surgery Heo

- **Incredible bonding strength!**

Zircos- E, liquid base etching solution roughens crown surface to increase bonding strength with porcelain, cementation and the bonding between a natural tooth and a full zirconia crown.

- **Looks and Feels like your own teeth!**

(This Etching solution allows for a natural looking full zirconia crown with application of porcelain.)

- **Hassle free adjustment!**

- **No more micro-cracks!**

Zircos-Inlay

- Using **Zircos-inlay anterior block** can provides same shade color as ceramic inlay in addition to provide more strength.
- **Zircos- E etching solution** will increase the bonding between a natural tooth and a Zircos - Inlay.



Before



After



Before



After



Before



After

Zircos-E[®] Etching solution



“Don't settle for the old way of making crowns.
START MAKE PREMIUM Tooth using our revolutionary
ZIRCOS -E etching solution.”

“Be the first to provide this unique service to your clients.”

Zircos-E® Types of Block



Posterior Block 1200MPa (1550°C sintering)

Pure Block



Shade Block



Multi Block



Anterior Block 800MPa (1500°C sintering)

Shade Block



Multi Block

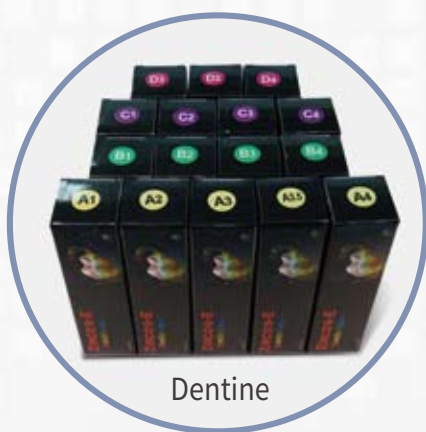


Zircos-E® Aqua Coloring Liquid

Acid free!
Contamination free!



Color



Dentine



Aqua Coloring Liquid component

Dentine	A1, A2, A3, A3.5, A4
	B1, B2, B3, B4
	C1, C2, C3, C4
	D2, D3, D4
Color	Gray, Pink, Violet, Brown, White, Orange, Blue, Dark gray



Creative Management



Ethical Management



Communication Management



Bioden research institute provides innovative and creative products of excellent quality with accurate information.



BIO DEN

Etched Full Zirconia technique





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