

A cluster of five blue squares of various sizes in the top-left corner, arranged in a descending pattern.

# USER MANUAL

## DENTAL ZIRCONIA CERAMICS BLOCK

A large, abstract arrangement of blue squares of various sizes and shades (light blue, medium blue, dark blue) in the bottom-right corner, creating a modern, geometric design.

# CATALOGUE

Company profile ----- P1

Zirconia brief introduction ----- P2

HT ----- P3

ST ----- P4

HTC ----- P5

STC ----- P6

STM ----- P7

ATM ----- P8

16ColorsDyeingLiquid ----- P9

26ColorsDyeingLiquid ----- P10

Certificates ----- P11



## Company profile

ZOTION introduced the advanced automatic production line in the the industry, and adopted the well-known nano-zirconia powder to produce high-density “Zotion” brand zirconia block which was made by the unique isostatic pressing technique. The latest generation of zirconia products of Zotion , which has more stable quality, better permeability and higher strength, meet the requirements of our customers .

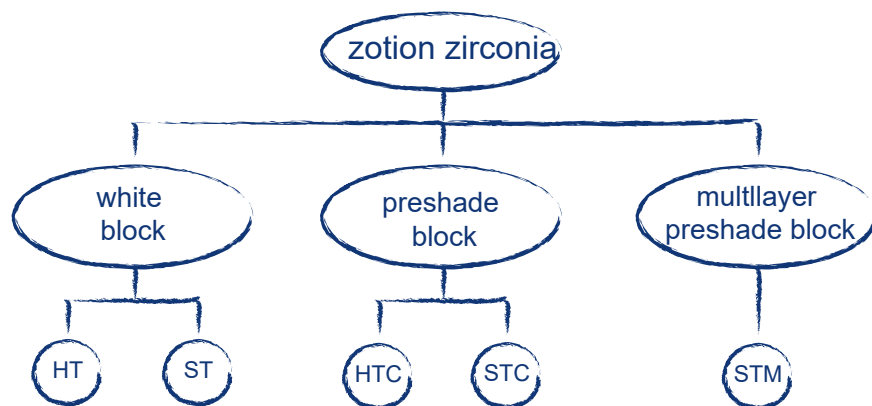
Zotion brand zirconia products are divided into two series: colorless (high transparent, super transparent and ultra transparent) and colored (high transparent preshaded zirconia, super transparent preshaded zirconia, and ultra preshaded transparent zirconia). They are made based on the different requirement and needs for the teeth restoration of the customers. The Zotion dental zirconia block match with Zotion 16 shades, 26 shades, and 7 shades special zirconia dyeing liquid. The effect is outstanding, the difference of light transmittance is small before and after the dyeing , the color of the whole zirconia denture after dyeing is evenly penetrated, and there is no change of the color after milling.



The Zotion brand zirconia has obtained CE certificate from the European Union and passed the ISO13485 standard. Our production and management which follows the standard of the production guarantee the stability of the products . Zotion implements strict quality testing standards and conducts all tests of the zirconia block on key performance indicators such as flexural strength, fracture toughness, light transmission and cutting performance to ensure the good quality of each piece of zirconia block. Zotion brand zirconia products have excellent biocompatibility and aesthetic effects. They have high density, high strength and excellent reliability. They are the perfect restoration materials for dental technicians.

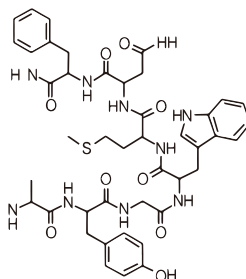


## Zotion zirconia ceramics block

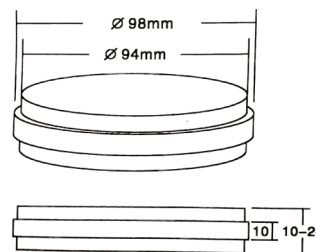


### Chemical composition

$ZrO_2 + HfO_2 + Y_2O_3$	$\geq 99\%$
$Y_2O_3$	$\leq 6.0\%$
$HfO_2$	$< 5.0\%$
$Al_2O_3$	$< 0.5\%$
Other oxides	$< 0.5\%$



### Specifications

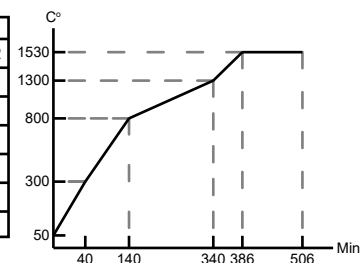


Open system zirconia	Girrbach System Zirconia	Zirkonzahn System Zirconia
D98×10(H)	AG71×10(H)	D95×10(H)
D98×12(H)	AG71×12(H)	D95×12(H)
D98×14(H)	AG71×14(H)	D95×14(H)
D98×16(H)	AG71×16(H)	D95×16(H)
D98×18(H)	AG71×18(H)	D95×18(H)
D98×20(H)	AG71×20(H)	D95×20(H)
D98×22(H)	AG71×22(H)	D95×22(H)
D98×24(H)	AG71×24(H)	D95×24(H)

### Sintering Chart

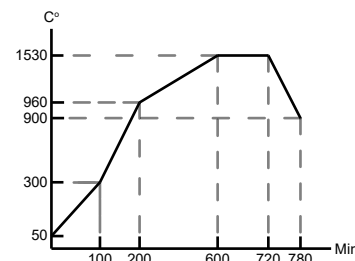
chart 1: (Bridge, Bridged crown)  $\leq 4$  units, single crown

Step	Start Temperature(°C)	End Temperature(°C)	Time(Min)	Speed(°C/min)
1	50	-2.0	0	Start from step2
2	50	300	40	7.5
3	300	800	100	5
4	800	1300	200	2.5
5	1300	1530	46	5
6	1530	1530	120	holding
7	1530	Room temperature	-121.0	Natural Cool



Tips: The max speed is better less than 20 °C/min  
Natural cool (Keep furnace door closed until the temperature down to room temperature)

chart2: Bridge > 4 units



Step	Start Temperature(°C)	End Temperature(°C)	Time(Min)	Speed(°C/min)
8	50	300	100	2.5
9	300	960	100	6.6
10	960	1530	400	1.4
11	1530	1530	120	holding
12	1530	900	60	10.3
13	900	Room temperature	-121	Natural Cool

Tips: The max speed is better less than 20 °C/min  
Natural cool (Keep furnace door closed until the temperature down to room temperature)

# Zotion zirconia ceramics block--HT



Translucency

≥41%

Three point bending strength

1200--1350Mpa

## Product advantage

HT zirconia block possesses high intensity and excellent translucency and is suitable for full ceramic copings and all kinds of bridges.

## Technical parameters

Density before sintering	$>3.15 \pm 0.05 \text{ g/cm}^3$
Density after sintering	$>6.0 \text{ g/cm}^3$
Linear expansion coefficient	$(10.3 \pm 0.5) \times 10^{-6} \text{ K}^{-1}$
Three point bending strength	$\geq 1200 \text{ Mpa}$
Translucency	$\geq 41\%$
Chemical solubility after sintering	$< 100 \mu\text{g/cm}^2$
Cytotoxicity test	Cytotoxicity 0 level
Radioactivity after sintering	$< 0.1 \text{ Bq/g}$
Sintering temperature	1480~1530°C, 1520°C is recommend



## Restoration indication symptom

Coping		✓
Bridged Coping		✓
3-4 units bridge		✓
5-6 units bridge		✓
Over 7 units bridge		✓
Cantilever bridge		✓
Inlay bridge		✓
Maryland fixed bridge		✓
Telescope crown		✓
Abutment		✓

# Zotion zirconia ceramics block--ST



Translucency

≥44%

Three point bending strength

900--1100Mpa

## Product advantage

ST zirconia block with high intensity and transparency is suitable for making anatomic crowns and copings of anterior teeth.

## Technical parameters

Density before sintering	$>3.15 \pm 0.05 \text{ g/cm}^3$
Density after sintering	$>6.0 \text{ g/cm}^3$
Linear expansion coefficient	$(10.3 \pm 0.5) \times 10^{-6} \text{ K}^{-1}$
Three point bending strength	$\geq 900 \text{ Mpa}$
Translucency	$\geq 44\%$
Chemical solubility after sintering	$<100 \mu\text{g/cm}^2$
Cytotoxicity test	Cytotoxicity 0 level
Radioactivity after sintering	$<0.1 \text{ Bq/g}$
Sintering temperature	1480~1530°C, 1520°C is recommend



## Restoration indication symptom

Coping		✓
Bridged Coping		✓
3-4 units bridge		✓
5-6 units bridge		✓
Over 7 units bridge		✓
Cantilever bridge		✓
Inlay bridge		✓
Maryland fixed bridge		✓
Telescope crown		✓
Abutment		✓

# Zotion zirconia ceramics block--HTC



Translucency

≥41%

Three point bending strength

1200--1350Mpa

Color

A1,A2,A3 for choice

## Product advantage

HTC(High-translucent preshade dental zirconia ceramics block) is pre-dyed on the basis of colorless high-translucent zirconia ceramics block. The denture does not need dyeing , and is suitable for inner crown and inner crown bridge.

## Technical parameters

Density before sintering	$>3.15 \pm 0.05 \text{ g/cm}^3$
Density after sintering	$>6.0 \text{ g/cm}^3$
Linear expansion coefficient	$(10.3 \pm 0.5) \times 10^{-6} \text{ K}^{-1}$
Three point bending strength	$\geq 1200 \text{ Mpa}$
Translucency	$\geq 41\%$
Chemical solubility after sintering	$< 100 \mu\text{g/cm}^2$
Cytotoxicity test	Cytotoxicity 0 level
Radioactivity after sintering	$< 0.1 \text{ Bq/g}$
Sintering temperature	1480~1530°C, 1520°C is recommend



## Restoration indication symptom

Coping		✓
Bridged Coping		✓
3-4 units bridge		✓
5-6 units bridge		✓
Over 7 units bridge		✓
Cantilever bridge		✓
Inlay bridge		✓
Maryland fixed bridge		✓
Telescope crown		✓
Abutment		✓

# Zotion zirconia ceramics block--STC



Translucency  $\geq 44\%$   
Three point bending strength 900--1100Mpa  
Color A1,A2,A3,A3.5 A4,B1,B2,B3  
B4,C1,C2,C3,C4,D2,D3,D4

## Product advantage

STC is preshade ST. It possesses high intensity, transparency and natural vivid color and it doesn't need dyeing process.

## Technical parameters

Density before sintering	$>3.15 \pm 0.05 \text{ g/cm}^3$
Density after sintering	$>6.0 \text{ g/cm}^3$
Linear expansion coefficient	$(10.3 \pm 0.5) \times 10^{-6} \text{ K}^{-1}$
Three point bending strength	$\geq 900 \text{ Mpa}$
Translucency	$\geq 44\%$
Chemical solubility after sintering	$<100 \mu\text{g/cm}^2$
Cytotoxicity test	Cytotoxicity 0 level
Radioactivity after sintering	$<0.1 \text{ Bq/g}$
Sintering temperature	1480~1530°C, 1520°C is recommend



## Restoration indication symptom

Coping		✓
Bridged Coping		✓
3-4 units bridge		✓
5-6 units bridge		✓
Over 7 units bridge		✓
Cantilever bridge		✓
Inlay bridge		✓
Maryland fixed bridge		✓
Telescope crown		✓
Abutment		✓

# Zotion zirconia ceramics block--STM



Translucency

≥49% ⇌ 43%

Three point bending strength

≥800 ⇌ 1100Mpa

Color

A1,A2,A3,A3.5 A4,B1,B2,B3  
B4,C1,C2,C3,C4,D2,D3,D4

Restoration indication symptom

## Product advantage

STM is multilayer zirconia block for making posterior. Not just preshaded, it shows natural shade transition of 7 Layers in one block from incisal to cervical after sintering. Naturally blending to real teeth.

## Technical parameters

Density before sintering	>3.15±0.05 g/cm <sup>3</sup> v
Density after sintering	>6.0 g/cm <sup>3</sup>
Linear expansion coefficient	(10.3±0.5)×10 <sup>-6</sup> K <sup>-1</sup>
Three point bending strength	≥800-1100Mpa
Translucency	≥43%-49%
Chemical solubility after sintering	<100 μg/cm <sup>2</sup>
Cytotoxicity test	Cytotoxicity 0 level
Radioactivity after sintering	<0.1 Bq/g
Sintering temperature	1480~1530°C, 1520°C is recommend



Coping		✓
Bridged Coping		✓
3-4 units bridge		✓
5-6 units bridge		✓
Over 7 units bridge		×
Cantilever bridge		✓
Inlay bridge		×
Maryland fixed bridge		✓
Telescope crown		✓
Abutment		✓

# Zotion zirconia ceramics block--ATM



Translucency

≥55% ⇔ 46%

Three point bending strength

≥600 ⇔ 900Mpa

Color

A1,A2,A3,A3.5 A4,B1,B2,B3  
B4,C1,C2,C3,C4,D2,D3,D4

## Product advantage

ATM is multilayer zirconia block for making anterior. Not just preshaded, it shows natural shade transition of 7 Layers in one block from incisal to cervical after sintering. Naturally blending to real teeth.

## Technical parameters

Density before sintering	$>3.15 \pm 0.05 \text{ g/cm}^3$
Density after sintering	$>6.0 \text{ g/cm}^3$
Linear expansion coefficient	$(10.3 \pm 0.5) \times 10^{-6} \text{ K}^{-1}$
Three point bending strength	$\geq 600-900 \text{ Mpa}$
Translucency	$\geq 46\%-55\%$
Chemical solubility after sintering	$<100 \mu\text{g/cm}^2$
Cytotoxicity test	Cytotoxicity 0 level
Radioactivity after sintering	$<0.1 \text{ Bq/g}$
Sintering temperature	1480~1530°C, 1520°C is recommend



## Restoration indication symptom

Coping		✓
Bridged Coping		✓
3-4 units bridge		✓
5-6 units bridge		✗
Over 7 units bridge		✗
Cantilever bridge		✗
Inlay bridge		✗
Maryland fixed bridge		✗
Telescope crown		✓
Abutment		✓

# 16 Colors Dyeing Liquid



## 16 Color series

Type of color set	Color series	Capacity
A color set	A1 A2 A3 A3.5 A4	60ml
B color set	B1 B2 B3 B4	60ml
C color set	C1 C2 C3 C4	60ml
D color set	D2 D3 D4	60ml

## Product advantage

The Zotion specialized dyeing liquid is corresponding to VITA system tooth guide. This products own strong penetrability and dye equably and precisely.

## Attention:

The time for soaking should depend on the size of restorations. Churn restoration by glass bar when dyeing to discharge air bubble, so that the color liquid and restorations could completely contact.



## Dyeing instruction

applicative material	Zotion AFFINI full-ceramic zirconia
applicative range	Coping、Crown、etc
Usage	Inside dyeing
Dyeing methods	Soaking、Brushing

## 26 Colors Dyeing Liquid



### Product advantage

The Zotion specialized dyeing liquid is corresponding to VITA system tooth guide. This products own strong penetrability and dye equably and precisely.

### Attention:

The time for soaking should depend on the size of restorations. Churn restoration by glass bar when dyeing to discharge air bubble, so that the color liquid and restorations could completely contact.



### 26 Color series

Type of color set	Color series	Capacity
R color set	2R1.5 2R2.5 3R1.5 3R2.5 4R1.5 4R2.5	60ml
L color set	2L1.5 2L2.5 3L1.5 3L2.5 4L1.5 4L2.5	60ml
M color set	1M1 1M2 2M1 2M2 2M3 3M1 3M2 3M3 4M1 4M2 4M3 5M1 5M2 5M3	60ml

### Dyeing instruction

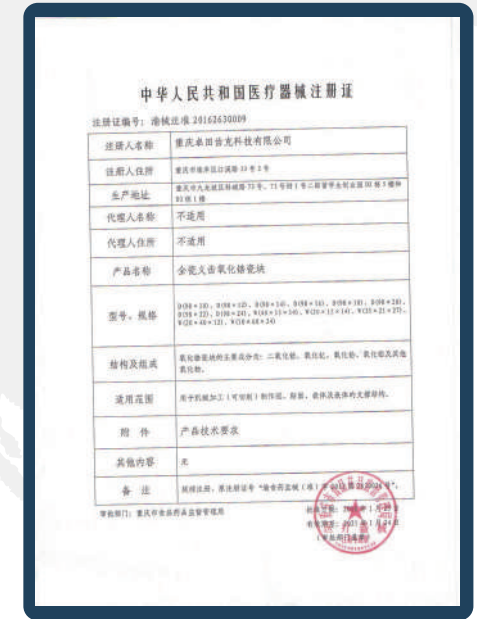
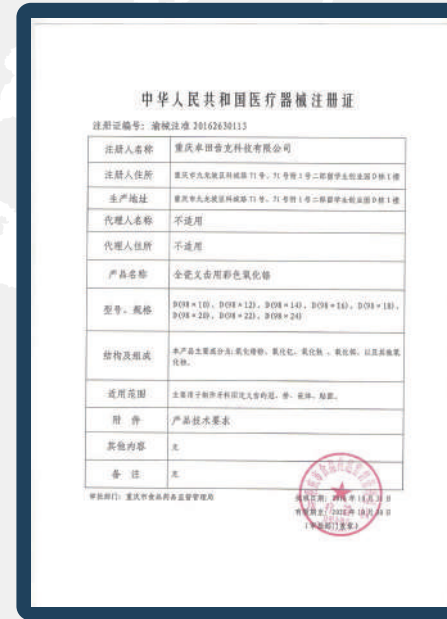
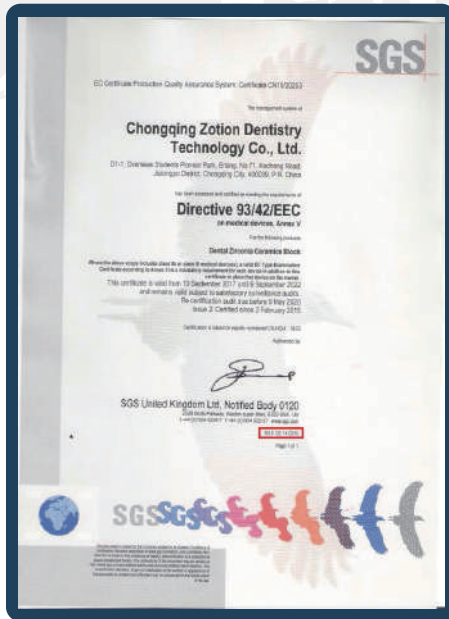
applicative material	Zotion AFFINI full-ceramic zirconia
applicative range	Coping、Crown、etc
Usage	Inside dyeing
Dyeing methods	Soaking、Brushing

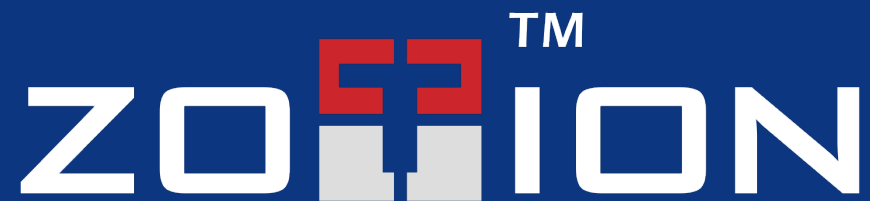
# Certificates

CE

ISO13485

CFDA





## **Chongqing Zotion Dentistry Technology Co.,Ltd.**

**Factory Add:**D1-1,Overseas Students Pioneer Park, Erlang, No.71,Kecheng Road, Jiulong District,  
Chongqing City ,400039,P.R.China

**Office Add:**4-6,1<sup>st</sup>Building,Kangtianxijin,Kecheng Road,Jiulongpo District Chongqing,China

**Web:**[www.zotiondental.com](http://www.zotiondental.com)

[www.zotiontech.com](http://www.zotiontech.com)

**Email:**[zotion@zotiontech.com](mailto:zotion@zotiontech.com)

**Tel:**+86-23-68618116

**Fax:**+86-23-68428793