



www.jyodent.com

WORLD CLASS ZIRCONIA CERAMIC DENTAL BLANKS





Jyoti Ceramic Industries is a global front runner in the manufacturing of advanced industrial and bio-ceramic products. During this journey of over 5 decades we have garnered rich manufacturing experience, great expertise and skill in the field of advance industrial ceramics.

In 2009 , Jyoti Ceramic ventured in the field of bio-ceramic by establishing a seperate bio-ceramic division, an innovative unit which aims to use class leading materials along with advanced technology and manufacturing processes to make ceramic dental blanks and frame works more affordable to the dental industry. This division is equipped with high pressure Uniaxial and Isostatic presses. Medit-T 310 High accuracy Laser Scanner, CNC open 4-Axis precision CAM Milling machine, high temperature microprocessor controlled sintering furnace, supported by state of the art R & D Lab and Tool room.

With values that include innovation, high business ethics, transparency in dealing and trust, we are consistently committed to maintaining high quality standards, increasing production efficiency and complete customer satisfaction, and are considered a name to be reckoned in the highly specialized area of industrial and bio ceramics.

Jyoti Research & Development at Glance



Scanning Electron Microscope (S.E.M.)



Atomic absorption spectrophotometer (A.A.S.)



Energy Dispersive X-ray Fluorescence (E.D.X.R.F.)



Spectrophotometer



Universal Testing Machine (UTM)

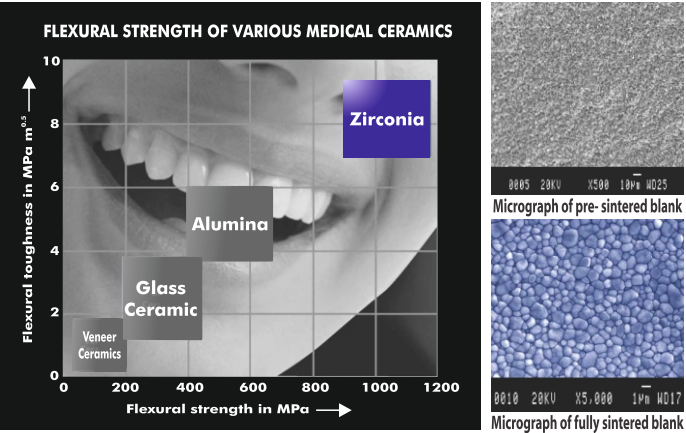
Jyodent Zirconia Ceramic Dental Blanks
Technical Data Sheet

Physical Properties

Colour	—	White
Surface Finish	—	Smooth
Condition	—	Solid Block
Odour	—	None
Melting Point	°C	2680
Boiling Point	°C	5500
Ignition Point	—	Non-flammable
Pre Sintered Density	g / cm ³	3.00 ± 0.2
Final Sintered Density	g / cm ³	6.08 ± 0.2
Solubility after final Sintering	—	Non-soluble
Radioactivity	Bq / g	< 0.01
Flexural Strength	MPa	> 1000
Grain Size	µm	< 0.5
Thermal Expansion	10 ⁻⁶ / K	9.71
Fracture Toughness	MPa m ^{0.5}	8.05
Young's Modulus	Gpa	210
Open Porosity	%	0
Chemical Solubility	µg.cm ⁻²	<100
Bulk Modulus	Gpa	81
Shear Modulus	Gpa	184
Modulus of Rupture	MPa	>1500

Chemical Properties Wt %

ZrO ₂ + HfO ₂ + Y ₂ O ₃ + Al ₂ O ₃	>99.9
Y ₂ O ₃	5.15 (± 0.20)
Al ₂ O ₃	0.25 (± 0.10)
SiO ₂	≤ 0.02
Fe ₂ O ₃	≤ 0.01
Na ₂ O	≤ 0.04



GRADE	Jyodent Iso pressed White Opaque Zirconia Disc (IS-ZD)	Jyodent Iso Pressed Translucent Zirconia Disc (IS-TR-ZD)	Jyodent Iso Pressed Extreme Translucent Zirconia Disc (IS-ETR-ZD)	Jyodent Iso Pressed Translucent coloured (preshaded) Zirconia Disc (IS-TR-CZD)
PHYSICAL PROPERTIES				
Sintering Temp °C	1450	1450	1450	1450
Transmittance % as per Shimadzu spectrophotometer UV2600	35.0	37.5	42.0	36.5
Transmittance % as per Haze Meter	41.6	44.6	49.0	43.4
Bending Strength (MPa)	1200	>1000	>600	>1000
Sintered Body Density (g/cm ³)	6.1	6.1	6.1	6.1
1mm Thickness				

Jyodent Bio-Ceramic State of the Art Manufacturing Unit



Hydraulic Compacting Presses




High Pressure Isostatic Press



Micro Processor Controlled Kilns




CNC CAD/CAM Milling Dental Centre




JYODENT UNIAXIALLY PRESSED WHITE OPAQUE ZIRCONIA DISC FOR CAD / CAM					
DESCRIPTION	TYPE	DIA (mm)	THICKNESS (mm)	PACKAGING	
Zirconia Disc White Opaque	ZD	98.00	10*/12/14/16/18/20/22/24/26	1 Piece per Box	

**Without collar / Rest all are with 10mm collar*



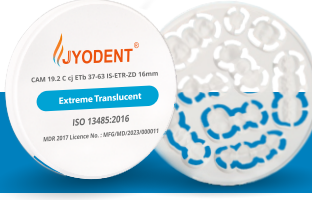
JYODENT ISO PRESSED WHITE OPAQUE ZIRCONIA DISC FOR CAD / CAM					
DESCRIPTION	TYPE	DIA (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Opaque Zirconia Disc	IS-ZD	98.00	10*/12/14/16/18/20/22/24/26	1 Piece per Box	

**Without collar / Rest all are with 10mm collar*




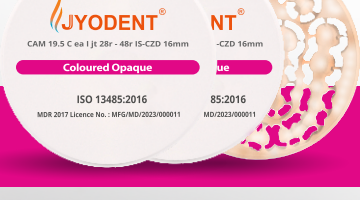
JYODENT ISO PRESSED WHITE TRANSLUCENT ZIRCONIA DISC FOR CAD / CAM					
DESCRIPTION	TYPE	DIA (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Translucent Zirconia Disc	IS-TR-ZD	98.00	10*/12/14/16/18/20/22/24	1 Piece per Box	

**Without collar / Rest all are with 10mm collar*




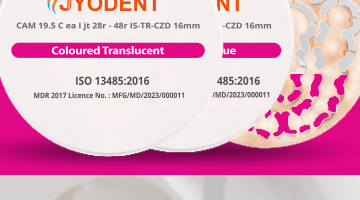
JYODENT ISO PRESSED WHITE EXTREME TRANSLUCENT ZIRCONIA DISC FOR CAD / CAM					
DESCRIPTION	TYPE	DIA (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Extreme Translucent Zirconia Disc	IS-ETR-ZD	98.00	10*/12/14/16/18/20/22/24	1 Piece per Box	

**Without collar / Rest all are with 10mm collar*




JYODENT ISO PRESSED COLOURED (PRESHADED) ZIRCONIA DISCS FOR CAD / CAM					
DESCRIPTION	TYPE	DIA (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed Coloured Opaque Zirconia Disc	IS-CZD	98.00	10*/12/14/16/18/20/22/24	1 Piece per Box	

**Without collar / Rest all are with 10mm collar*




JYODENT ISO PRESSED TRANSLUCENT COLOURED (PRESHADED) ZIRCONIA DISCS FOR CAD / CAM					
DESCRIPTION	TYPE	DIA (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed Coloured Translucent Zirconia Disc	IS-TR-CZD	98.00	10*/12/14/16/18/20/22/24	1 Piece per Box	


**Without collar / Rest all are with 10mm collar*




JYODENT UNIAXIALLY PRESSED WHITE OPAQUE BLANK WITH METAL SHANK FOR CAD / CAM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
White Opaque Zirconia Blank with Shank	ZBS	20.00	14.00	15.00	10 Pieces per Box	
		20.00	19.00	15.50	5 Pieces per Box	
		40.00	20.00	15.50	5 Pieces per Box	
		55.00	19.00	15.50	5 Pieces per Box	
		65.00	25.00	22.00	3 Pieces per Box	




JYODENT ISO PRESSED WHITE TRANSLUCENT BLANK WITH METAL SHANK FOR CAD / CAM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Translucent Zirconia Blank With Shank	IS-TR-ZBS	55.00	19.00	15.50	5 Pieces per Box	




JYODENT ISO PRESSED WHITE EXTREME TRANSLUCENT BLANK WITH METAL SHANKS FOR CAD / CAM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Extreme Translucent Zirconia Blank With Shank	IS-ETR-ZBS	55.00	19.00	15.50	5 Pieces per Box	






JYODENT UNIAXIALLY PRESSED WHITE OPAQUE ARCH (D SHAPE) BLANKS FOR CAD/CAM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Zirconia White Opaque Arched 'D' Shape Blank	ZAR	89.00	72.00	10/12/14/16/18/20/22/24	1 Piece per Box	





JYODENT ISO PRESSED WHITE TRANSLUCENT ARCH (D SHAPE) BLANKS FOR CAD/CAM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Translucent Zirconia Arch 'D' Shape Blank	IS-TR-ZAR	89.00	72.00	10/12/14/16/18/20/22/24	1 Piece per Box	



JYODENT ISO PRESSED WHITE EXTREME TRANSLUCENT ARCH (D SHAPE) BLANKS FOR CAD/CAM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Iso Pressed White Extreme Translucent Zirconia Arched 'D' Shape Blank	IS-ETR-ZAR	89.00	72.00	10/12/14/16/18/20/22/24	1 Piece per Box	



JYODENT UNIAXIALLY PRESSED WHITE OPAQUE RECTANGULAR BLOCK FOR AMANN GIRRBACH* MOM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Zirconia White Opaque Block	ZB	76.00	38.00	12/16	2 Pieces per Box	
		65.00	30.00	20	3 Pieces per Box	
		40.00	20.00	16	5 Pieces per Box	



JYODENT UNIAXIALLY PRESSED WHITE OPAQUE 'D' SHAPE ARCH BLANK FOR ZIRCON ZAHN * MOM						
DESCRIPTION	TYPE	L (mm)	W (mm)	THICKNESS (mm)	PACKAGING	
Zirconia White Opaque 'D' Shape Arch Blank	ZAR	94.00	75.50	12/14/16	1 Piece per Box	
		88.00	57.00	16	1 Piece per Box	

JYODENT[®]

Colouring Liquid



This product is available for INDIAN market only.

Jyodent colouring liquid are developed especially for shading pre-sintered milled Zirconia ceramic dental restoratives, it is an acid based liquid to give a perfect natural shade tooth look.

During the development of Jyodent colouring liquid we paid particular attention to aesthetics in particular translucency, colour and for fast simple reproduction of tooth colours by immersion and the paint-on-technique.

A dipping time of approx 10-12 minutes are sufficient to achieve a uniform colouring on the framework. The framework must be dried after the dipping process. Further drying of the framework can be done under drying lamp. After completion of drying, the framework can be sintered at 1450°C dwell or soak time of 2.0 hrs. The penetration of colouring liquid is sufficient to preserve aesthetics in the sintered restoration even after some of the ceramic material is removed by grinding, the underlying white ceramic won't be revealed.

Jyodent colouring liquids are available in Vita* classic dentine shades.

Mode of Packaging

VITA* Shade	50 ml	100 ml
A1, A2, A3, A3.5, A4	✓	✓
B1, B2, B3, B4	✓	✓
C1, C2, C3, C4	✓	✓
D2, D3, D4	✓	✓

* VITA is a registered trademark of VITA Zahnfabrik H. Rauter GmbH & Co. KG Germany

DIPPING TECHNIQUE



Dipping in colouring liquid



Drying after Dipping under infrared lamp or Natural Drying

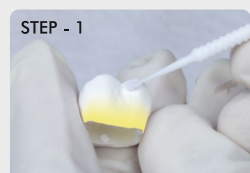


Final Crown (After Glaze & Stains)



Sintered Crown

BRUSH ON TECHNIQUE



Colouring liquid applying on crown by brush.



Drying after colour liquid applied by brush under infrared lamp or Natural drying



Final Crown (After Glaze & Stains)



Sintered Crown

Duralox[®] 997

99.7% High Purity Alumina Ceramic

MICRO BEADS

For uniform sintering of Zirconia Dental restoration



Duralox 997 Spherical Micro Beads are produced from proprietary formulated high purity alumina composite, which contains 99.7% alpha alumina crystals having negligible percentage of silica in its body composition.

What makes Duralox 997 Micro Beads state of the art material for dental labs needs are its salient attributes such as :

- Non-radioactive
- Chemical inertness
- Its sapphire equivalent hardness (measuring at a magnitude of 9+ on the Moh's scale or 1600 on Vicker's scale)

Duralox 997 micro beads not only have a dense internal micro structure but also have a smooth surface finish and can withstand high temperature making them ideal for sintering of Zirconia restoratives on a bed of beads in the saggar. In addition, these beads adapt smoothly to the shape of Zirconia restoratives and allow the units to shrink without any deformation.

Physical Properties

Composition	: 99.7% Al ₂ O ₃
Colour	: Off White
Average crystal size	: 2-7 Micron
Density	: 3.95 ±0.05 g/cm ³
Bulk Density	: 2.35 ±0.05 kgs/ltr
Porosity	: Nil
Water absorption	: Nil
Hardness on Moh's scale	: 9+
Hardness on Vicker's scale	: 1600 Hv ₁₀
Compressive strength	: 3300 Mpa
Crushing strength (Ø 2mm bead)	: 100-110 kgf
Flexural strength (25°C)	: 3700 kg/cm ²
Modulus of elasticity	: 3.5 x 10 ⁶ kg/cm ²
Fusion temperature	: >2000°C (3632°F)
Maximum use temperature (No load condition)	: 1750°C (3182°F)
Co-efficient of thermal expansion	: 8.4 x 10 ⁻⁶ /°C
Thermal conductivity (20°C)	: 28 W/m/°K

Chemical Properties

Al ₂ O ₃	: 99.7%
MgO	: 0.15%
Others	: 0.15%

Standard Fraction range sizes of Beads

Ø 0.4 to Ø 0.7 mm
Ø 0.7 to Ø 1.2 mm
Ø 1.2 to Ø 1.7 mm
Ø 1.7 to Ø 2.4 mm
Ø 2.4 to Ø 2.8 mm
Ø 2.8 to Ø 3.3 mm

We also offer custom fraction size beads, if found feasible for production.



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