

## Coloring ArgenZ Ultra

For best results, use recommended ArgenZ Shading Liquids. ArgenZ Esthetic / Ultra is compatible with all major dental zirconia coloring systems.

## Sintering ArgenZ Ultra

### Standard Cycle

Stage	Program	Rate/Minute	Temperature	Time
1	Heating Ramp	10°C	900°C	
2	Heating Ramp	7°C	1510°C	
3	Hold Time/Heat Soak		1510°C	120 min.
4	Cooling Ramp	7°C	1000°C	
5	Cooling Ramp	10°C	200°C	

### Large Bridge Cycle\*

Stage	Program	Rate/Minute	Temperature
1	Heating Ramp	4°C/Minute	1510°C
2	Heat Soak	150 Minutes	1510°C
3	Cooling Ramp	4°C/Minute	200°C

**NOTE:** Sintering temperatures are recommendations. If necessary, carry out a trial sintering cycle and adapt the sintering times and/or temperatures as needed.

After controlled cooling segment, the framework can cool naturally.

\*Large bridges/frameworks should be fired on large bridge cycles at 4 degrees/minute.

## ArgenZ Ultra

### Material Properties

#### Strength

Flexural Bending Strength - ArgenZ Ultra  
>1350 MPa mean value

#### Density

≥6.00g/cm<sup>3</sup>

#### Composition

ZrO <sub>2</sub>	90.95%
Y <sub>2</sub> O <sub>3</sub>	4.5 - 6.0%
HfO <sub>2</sub>	≤5 wt%
Al <sub>2</sub> O <sub>3</sub>	≤0.5 wt%

Type/Class Type II/Class 5  
BS EN ISO 6872:2015

#### Thermal Expansion Coefficient

25-500°C = 10.4 μm/m-°C

### HAZARDS IDENTIFICATION - EMERGENCY OVERVIEW

#### Specific Physical Form

Solid block or slab

#### Odor, Color, Grade

White odorless block

#### General Physical Form

Solid

#### Immediate Health, Physical, and Environmental Hazards

No immediate health, physical, or environmental hazards are anticipated.

#### Eye Contact

Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing, and corneal abrasion.

#### Skin Contact

Mechanical skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

#### Inhalation

During grinding, scraping, or sanding, inhalation of particles may occur, resulting in upper respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

#### Ingestion

No health effects are expected.

Please refer to the complete MSDS sheet provided with your order.

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# ArgenZ Zirconia

## Instructions for Use

ULTRA  
High Strength



(800) 255-5524

argen.com

**ArgenZ Ultra (high strength)** dental zirconia can be used for the production of full-contour and substructure restorations. The following instructions provide general guidelines for handling, designing, milling, sintering and adjusting of ArgenZ material and should be followed very carefully to avoid any loss of aesthetics, fit, durability or overall quality.

## Indications for Use

ArgenZ Ultra (high strength) Zirconia can be used for the production of full-contour and substructure restorations.

### For Use in Canada

Health Canada restricts zirconia bridges to six units with a maximum of two pontics next to one another.

## Handling ArgenZ

Inspect each shipment for damage and do not use damaged discs for the production of dental restorations. Store ArgenZ in a cool, dry temperature-stable environment (between 5°C and 50°C) in the original packaging.

## Adjusting ArgenZ

- Sandblast the interior and exterior of the restoration with aluminum oxide (50 micron grit size) at 40 psi.
- Only use burs specifically designed for adjusting zirconia. Always ensure that zirconia is wet during the grinding process. A high-speed wet hand piece, at low speed, is recommended during the adjusting process in order to keep heat to a minimum.
- DO NOT grind on the basal grooves and tooth connections after sintering.
- If possible, smooth rough or sharp edges.

### ArgenZ Technical Support

For further questions or technical support, please contact Argen's Technical Support staff at **(800) 255-5095**

## Designing ArgenZ

Noncompliance with these guidelines could result in an unfit or failed restoration.

DESIGN OPTION	DESIGN GUIDANCE
<b>Drill Compensation</b>	Drill compensation must be activated for all substructures milled from a solid structure.
<b>Cement Gap</b>	The distance where the coping intersects the die at the margin area. Use this setting to control margin fit.
<b>Extra Cement Gap</b>	The distance between the coping walls and the die. Use this setting to control internal fit.
<b>Distance to Margin Line</b>	The distance from the margin outer line to the start of the interior wall of the coping.
<b>Smooth Distance</b>	The distance from the margin line to the margin engagement point. Should be set at 0.20mm.
<b>Drill Radius</b>	The drill radius should be the size of the smallest end mill used to mill the pattern.
<b>Drill Compensation Offset</b>	The distance from the margin line to the area affected by drill compensation. Should be a minimum of 0.5mm.
<b>Margin Line Offset</b>	The effective thickness of the margin line and should not be less than 0.16mm. Thinner margin lines will result in a higher failure rate.
<b>Offset Angle #1</b>	The offset angle should not be less than 65°
<b>Extension Offset</b>	The extension offset should not be less than 0.01mm
<b>Wall Thickness</b>	A nominal wall thickness of 0.5mm will ensure a consistently quality product. Reducing this value could result in fractures or holes in the framework.
<b>Bridge Connectors</b>	Recommended Anterior restorations: 6mm <sup>2</sup> minimum. Recommended Posterior restorations: 9mm <sup>2</sup> minimum.

## Milling ArgenZ

Pre-sintered (or “green”) zirconia material has an inherent shrinkage rate associated with each production lot. This shrinkage rate, usually formatted as 1.XXXX, can be found on the side of the actual disc. This number **MUST** be input into the milling preparation software to ensure the accuracy of the eventual restoration.

**When milling ArgenZ, always follow these general guidelines:**

- Reference the mill's user manual to prevent overtightening of discs in fixture.
- Only use sharp end mills with diamond coating.
- Do not use any restoration that has chips and/or cracks. Remove the units from the disc using a handpiece with a diamond-coated burr.
- Smooth the support areas with a medium-grit rubber polishing wheel.
- Remove any residual zirconia dust with an art brush.
- If a wet mill is used make sure all the zirconia is completely dry before shading/sintering. Air dry for at least 30 minutes prior to sintering. Damp zirconia will crack if placed in the sintering oven.