Instruction Manual

Acme A-Zir zirconia are milling discs intended for making single or multi-piece prostheses using CAD/CAM dental technology.

Supplier

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Chemical properties

Compositions	A-Zir	Standard requirement
ZrO2+HfO2 +Y2O3	99.5%	≥99.0%
Y2O3	4.8%	4.5% ~5.4%
Al2O3	<0.5%	<0.5%
Other Oxide	<0.3%	<0.5%

Physical properties

	HT	ST (White& Shaded)	STML	UT (White& Shaded)	UTML	3D
Density Post Sintering (g/cm3)	≥6.1	≥6.1	≥6.0	≥6.0	≥6.0	≥6.0
Flexural Strength (Mpa)	1500	1200	1200	900	600~900	750~1100
Translu-cency	39%	43%	43%	46%	46%~49%	43%~49%
Chemical Solubility (ug/cm2)	2.5	2.5	2.5	2.5	2.5	2.5
Radioacti-vity (Bq.g)	≤0.001	≤0.001	≤0.001	≤0.001	≤0.001	≤0.001
Vickers HV10 hardness	1250	1250	1250	1250	1250	1100
CTE	(10.5±0.5)* 10-6K-1	(10.5±0.5)* 10-6K-1	(10.5±0.5)* 10-6K-1	(10.5±0.5)* 10-6K-1	(10.5±0.5)* 10-6K-1	(10.5±0.5)* 10-6K-1

Indication

Acme A-Zir zirconium discs are CAD/CAM dental materials intended for the manufacture of crowns, bridges, inlays, onlays. Please select the material on the advice of a professional.

	HT	ST (White& Shaded)	STML	UT (White& Shaded)	UTML	3D
Anterior	✗	✓	✓	✓✓	✓✓	✓✓
Posterior	✓✓	✓✓	✓✓	✗	✗	✓
Inlay	✓✓	✓✓	✓	✓	✓	✓
Onlay	✓✓	✓✓	✓	✓	✓	✓
Veneer	✗	✓	✓	✓✓	✓✓	✓✓
Bridge ≤5units	✓✓	✓✓	✓✓	✓	✓	✓✓
Bridge ≥5units	✓✓	✓✓	✓✓	✗	✗	✓✓

✗ Means can not be used
✓ Means can but not the best choice
✓✓ Means the best choice

Preparation

Recommendations for the preparation include a marked chamfer or a rounded step.

- Minimum cutting depth at the preparation border 1 mm
- 1.5 to 2 mm of substance removed occlusal/ incisal
- Edge radius 0.7 mm
- Preparation angle 6° to 8°

To avoid stress concentration, pay attention to the path of insertion, cutting, gingival separation.Lingual wall thickness ≥0.8 mm; Lip wall thickness ≥1.0 mm; Length of continuous pontics≤30mm;Continuous overhang length ≤15 mm.Cross-sectional area of anterior connector ≥9-mm²; Back connector cross-sectional area ≥12mm².

Milling

Only those machines and tools which are approved for processing pre-sintered blanks made of zirconium oxide can be used for manufacturing restorations made of Acme A-Zir zirconia blanks.Indicator arrow marked on the disk, indicating the incisal/occlusal direction of the tooth. After milling, ensure that the restorations are free of shiny areas on the surface, cracks, chips, etc.Please separate the finished milled parts from the blanks carefully using suitable tools. Please use Acme dying liquid to dye the restorations milled by white blanks and dry the restoration before sintering.

Sintering

To ensure the best results, please select the corresponding sintering program according to the material.

HT/ST /ST color /ST Multilayer Sintering Curve (1-7)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	1000	130	7.5
Step2	1000	1200	40	5
Step3	1200	1530	110	3
Step4	1530	1530	120	0
Step5	1530	800	104	-7
Step6	800	natural cooling 20	/	/

HT/ST /ST color /ST Multilayer Sintering Curve (7-10)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	300	70	4
Step2	300	1000	175	4
Step3	1000	1530	177	3
Step4	1530	1530	120	0
Step5	1530	800	146	-5
Step6	800	natural cooling 20	/	/

HT/ST /ST color /ST Multilayer Sintering Curve (10-14)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	300	93	3
Step2	300	1000	233	3
Step3	1000	1530	265	2
Step4	1530	1530	120	0
Step5	1530	800	183	-4
Step6	800	natural cooling 20	/	/

UT Sintering Curve (1-5)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	1000	130	7.5
Step2	1000	1200	40	5
Step3	1200	1450	83	3
Step4	1450	1450	120	0
Step5	1450	800	93	-7
Step6	800	natural cooling 20	/	/

UT Multilayer /3D Multilayer Sintering Curve (1-5)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	1000	130	7.5
Step2	1000	1200	40	5
Step3	1200	1500	100	3
Step4	1500	1500	120	0
Step5	1500	800	100	-7
Step6	800	natural cooling 20	/	/

UT Multilayer /3D Multilayer Sintering Curve (7-10)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	300	70	4
Step2	300	1000	175	4
Step3	1000	1500	167	3
Step4	1500	1500	120	0
Step5	1500	800	140	-5
Step6	800	natural cooling 20	/	/

UT Multilayer /3D Multilayer Sintering Curve (10-14)

Sintering step	Start Temperature(℃)	End Temperature(℃)	Time(Min)	Rate(℃/Min)
Step 1	20	300	93	3
Step2	300	1000	233	3
Step3	1000	1500	250	2
Step4	1500	1500	120	0
Step5	1500	800	175	-4
Step6	800	natural cooling 20	/	/

Further Processing

If possible, the finally-sintered units should not be processed mechanically. However, if this is unavoidable, only water-cooled diamond-fitted tools in correct working order may be used. The interdental connection points should not be polished. In principle, the basal polishing of these connection points must always be avoided for stability reasons. Also in the case of abutments, sharp edges should be avoided and instead rounding is to be aimed for.

Warning

This product may only be used by trained dental technicians, dentist and professional persons. Do not collide with hard objects and violent pressing, vibration or rain shall be avoided during handling. Unsintered ceramics block shall not be used as denture or to repair tooth directly.Do not use expired product.

Storage conditions

Dry storage, protect from moisture/humidity.

Package

Each piece is packed by hard carton. Waste Disposal: Does not pollute environment.

Manufacturer

Shenzhen Yurucheng Dental Materials Co.,Ltd

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Waste Disposal

Does not pollute environment.

Key of Symbols

Signal	Description
	Consult instructions for use
	Weee label
EC REP	European Representative
CE 0197	This item is compliant with Medical Device. Directive 93/42/EEC of June 14, 1993, a directive of the European Economic Community
	Manufacturer
	Date of manufacture
LOT	Batch code
	Storage and Transport Temperature limitation
	Storage and Transport Humidity limitation
	Caution
	Fragile, handle with care
	Keep dry
	Do not reuse
	Keep away from sunlight
	Use by XXXX-XX (year-month)