

[Biological properties]

1. **Cell toxicity:** cell toxicity should be no more than 1 grade
2. **Short time(oral) general toxicity:** no short time(oral) general toxicity should happen
3. **Delayed hypersensitivity reaction:** no delayed hypersensitivity reaction
4. **Intradermal reaction:** contrast comprehensive mean score difference of test sample and solvent should be no more than 1.0
5. **Ames test:** mutation should be negative

[Contraindication] patients without occlusion teeth are forbidden to use.

[Service life] 20 years

[Storage] Keep storage in clean and dry room, avoid fierce extrusion and vibration and collision with hard things

[Package] Carbon and plastic package

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[Manufacturer]

Name: Aidite (Qinhuangdao) Technology Co., Ltd.

Address: No.9 Dushan Road, Economic and Technological Development Zone, Qinhuangdao City China

Tel: +86 335 8587898

Fax: +86 335 8587198

[European representative]

Name: MedNet EC-REP GmbH

Address: Borkstrasse 10, 48163 Münster, Germany

Please contact the manufacture if you have any question.

Dental Glass Ceramics Instruction

[Product name] Dental Glass Ceramics

[Main composition] SiO₂, Li₂O, Al₂O₃, K₂O and other oxide.

[Product color] OM1,OM2,OM3,A1,A2,A3,A3.5,A4,B1,B2,B3,B4,C1,C2,C3,C4,D2,D3,D4,BL1,BL2,BL3,BL4.

[Models] HT,LT

[Product specification]

Cylinder (Diameter mm×Height mm)

11×8,12×18,16×16,20×20,98×10,98×12,98×14,98×16,98×18,98×20,98×22,98×25,95×10,95×14,95×18,95×22,100×10,100×12,100×14,100×16,100×18,100×20,100×22,100×25,12.5×10,12.5×15,12.5×20

Cuboid (Length mm×Width mm×Height mm)

40×15×14,40×15×19,55×15×19,65×25×22,85×40×22,92×75×12,92×75×14,92×75×16,92×75×18,92×75×20,72×40×25,60×25×20,50×25×20,43×25×16,58×29×16,75×36×16,87×56×16,93×75×16,72×42×12,72×42×14,72×42×16,72×42×18,72×42×20,72×42×22,32×15×15,15.5×11×13,18×13×15,18×14×12,14×12×10,8×8×15,8×10×15,10×12×15,14.4×14.4×18,18×16×18,40×15×15,20×15×14,20×15×19,55×15.5×19,65×40×22

[Type] Type II

[Class] II a

[Application] Used to make all ceramic restorations.

[Methods]

Milling: Operated by special dental technician through CAD/CAM or processed by manual polishing system. It is advised to use special equipment. After milling, it needs dyeing material with sintering temperature of no more than 820 °C to finish the surface color treatment.

Pressing: Pressed by special dental pressing furnace. It is advised to use special equipment. Final pressing temperature for dental glass ceramics is 900°C-940°C. Sintering procedure is : Start heat (700°C)→900°C-940°C, heat step 60°C/minute; time delay 10-40 minutes at 900°C-940°C; Need to vacuumize at 700°C-960°C(vacuum value 5bar); do not take out until drop to below 300°C.

[Physical & chemical properties]

- 1.Flexural strength:** flexural strength of dental glass ceramics blocks should be no less than 300Mpa.
- 2.Solubility:** solubility should be no more than 2000ug.cm²
- 3.Radioactivity:** Radioactivity of dental glass ceramics blocks should comply with requirement that radiation activity of element ²³⁸U in unit mass product should be no more than 1.0Bq.g⁻¹

Dental Glass Ceramics (CAD/CAM) User Instruction

[Translucency]

HT: High translucency

LT: Low translucency

[Product advantages]

- ① Simple and rapid sintering process.
- ② Suitable for CAD/CAM.
- ③ Two types of translucency HT/LT.
- ④ Good bonding performance.
- ⑤ Low wear on natural teeth.

[Application]

HT (high translucency): inlay, onlay, veneer, single crown, partial crown, 3 units bridge.

LT (low translucency): inlay, onlay, coping, full crown, 3 units bridge.

Preparation standard

1. Shoulder preparations should not be prepared at corners and sharp edge areas. Shoulder preparations must be rounded Inner edge or bevel.
2. It is required to reserve 1mm space for cutting edge preparation to ensure that the ceramic block can achieve the ideal grinding effect during CAD / CAM processing.
3. If possible, it is best to prepare only the enamel layer of the incised edge, and avoid preparing in the stress concentrated point area.

[Operation process]

1.Scanning

Support traditional process and mouth scan to obtain corresponding intraoral data, and transfer the scanned data to CAD design software for restoration design.

2.Design

Dental CAD software was used for restoration design.

3.Nesting

Perform typesetting according to the correct operation process of the typesetting software.

Notes for typesetting:

- ① The specification data of glass ceramics in the software should be consistent with the actual specification of glass ceramics.
- ② Be sure to choose the right type of restoration.
- ③ when adjusting the angle and position of the restoration, the position of the restoration should be adjusted with the direction of emplacement at the design time as the cutting direction.
- ④ Add the connecting rods to the tooth protruding position, the diameter of the connecting rods can be adjusted according to the size of the restoration, and the diameter range is 1.2-3.0mm.
- ⑤ The distance between the connecting rods and the cervical edge should not be too close, and try to avoid the mesial / distal contact area.

4. Milling

Follow the correct operation procedure of the cutting machine.

Notes for milling:

- ① When installing the glass ceramics, be sure to check whether the iron handle of the glass ceramics is installed in place, otherwise the milling data will be inaccurate.
- ② Must keep enough air pressure.
- ③ The maintenance of equipment should include regular calibration, cleaning and lubrication. No vibrations abnormal noise during milling should be present. If there is a problem with the accessory, replace it in time.
- ④ It is necessary to record the number of restorations cutting by the needle, and the needle can be used for cutting restoration within the service life.
- ⑤ Must check whether the needle sequence is installed correctly.
- ⑥ Must assure cutting liquid concentration and liquid level is achieved, and it can be sprayed on the tip of the needle completely.

5. Grinding

In the "purple" state, the strength is higher than the glass phase, and the strength is lower than the crystalline phase, and the edge stability is high, reducing the wear rate of the needle. Therefore, if you need to polish, please polish the restoration in the "purple" state.

Notes for grinding:

- ① Must use the special glass ceramic grinding tools. It is recommended to use Aidite glass ceramic special grinding tools.
- It is important to use the right grinding tools to grind and polish the restorations. If improper grinding tools are used, chipping may appear, or the temperature may be too high.
- ② Grinding machine is stable and no vibration.
- ③ A soft towel or sponge pad needs to be placed on the table to prevent the teeth being damaged.

6. Sintering and glazing

This product is purple before sintering, and will change to normal tooth color after sintering.

Sintering and glazing of glass ceramics can be divided into two methods:

Method 1: Finish the sintering and glazing together

Method 2: First sintering and then glazing

Please strictly follow the sintering curve:

Start temp	Drying time	Heating rate	Highest temp	Holding time	Final temp
450°C	4min	40°C/min	840°C	2min or 6min	300°C

Notes for sintering and glazing:

- ① The maximum temperature holding time of veneer and inlay is 2min, and that of single crown and bridge is 6min.
- ② Avoid direct air conditioner or fans to prevent potential fracture or cracking due to fast cooling. Take the restorations out after natural cooling.
- ③ Do not use quench cooling tools such as metal to contact high temperature restorations.

Sintering program of Aidite staining and glazing kit:

Start temp	Drying time	Heating rate	Highest temp	Holding time	Final temp
500°C	4min	50°C/min	820°C	2min	300°C