

Technical data sheet

Lithium Disilicate (Glass Ceramics)

IPS e.max®CAD



Manufacturer

Ivoclar Vivadent AG

Bendererstrasse 2

9494 Schaan

Liechtenstein

Ivoclar Vivadent AG

is certified according to

■ DIN EN ISO 13485

■ RL 93/42/ECC (CE 0123)

■ Description

Lithium Disilikat *IPS e.max®CAD*

■ Description

IPS e.max® CAD is a Lithium Disilicate glass-ceramic block for the CAD/CAM technology. The block can be processed very easily by using CAD/CAM in the crystalline intermediate stage. The strength of the material is 130-150 [MPa or N/mm²] in the intermediate working phase. After grinding the IPS e.max CAD blocks, the crystallisation of the restoration takes place in a ceramic kiln. The crystallization process is simple, unlike some other CAD/CAM ceramics, and runs little shrinkage or complex infiltration processes.

The crystallisation process leads to a transformation of the structure, with controlled lithium disilicate crystals growing. The physical transformation properties and the corresponding optical properties are achieved by the structural transformation.

■ Indications

- Inlays, onlays and veneers
- partial crowns
- Crowns in the anterior and posterior teeth
- area. Primary telescopic crowns
- Implant superstructure for single tooth restorations (anterior and posterior area)

■ Contraindications

- Full-veneering in the molar region
- requires very deep subgingival
- preparations
- Patients with severely reduced residual
- dentures and bruxism
- all applications not listed as an indication

Technical data sheet

Lithium Disilicate (Glass Ceramics)

IPS e.max®CAD



Manufacturer

Ivoclar Vivadent AG
Bendererstrasse 2
9494 Schaan
Liechtenstein

Ivoclar Vivadent AG
is certified according to
■ DIN EN ISO 13485
■ RL 93/42/ECC (CE 0123)

Options

IPS e.max® CAD HT (High Translucency)

The HT blocks are available in **16 A-D** and **4 Bleach BL shades** in one size (C 14). Due to their translucency, the blocks are ideally suited for the production of small restorations (e.g., inlays, onlays). Restorations made from HT blocks use a natural chameleon effect and an extraordinary adaptation to the remaining tooth structure.

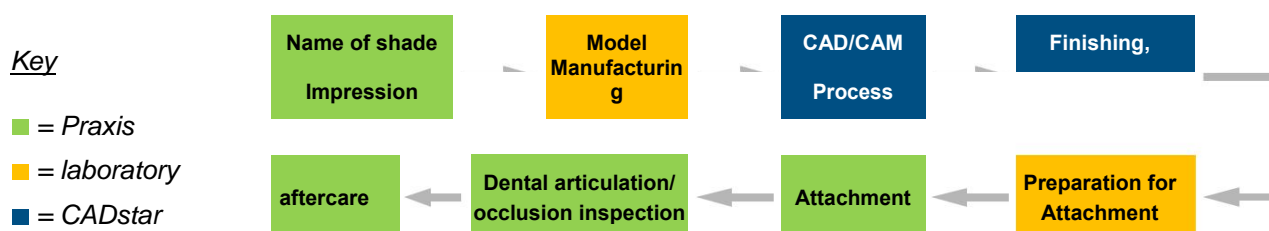
IPS e.max® CAD LT (Low Translucency)

The LT blocks are available in **16 A-D** and **4 Bleach BL shades** in a size (C 14). Restorations made from LT blocks have a natural brightness and chroma. This prevents the restoration from turning grey.

IPS e.max® CAD MO (Medium Opacity)

MO blocks are available in **5 group shades (MO 0 - MO 4)** and in one size (C14). Due to their opacity (measurement of light resistance - clouding), the blocks are ideally suited for the production of substructures on vital or slightly discoloured tooth stumps.

Step-by-step manufacturing process



CAD/CAM Moulding process

Since a compression of 0.2% takes place during the crystallisation of IPS e.max® CAD, the compression factor must already be stored in the respective software. This ensures that polished IPS e.max® CAD restorations have a high degree of fitting accuracy after crystallisation. The processing steps for the production of the desired restoration can be found in the applicable processing instructions. Compliance with manufacturer's instructions is mandatory!

Technical data sheet

Lithium Disilicate (Glass Ceramics)

IPS e.max®CAD



Manufacturer

Ivoclar Vivadent AG

Bendererstrasse 2
9494 Schaan
Liechtenstein

Ivoclar Vivadent AG is
certified according:

■ DIN EN ISO 13485

■ RL 93/42/ECC (CE 0123)

■ Processing instructions

Operating and processing instructions for the dental technician IVOCLAR VIVADENT IPS e.max® CAD (LABSIDE)

<http://www.ivoclarvivadent.com/de/downloadcenter/verarbeitungsanleitungen-fuer-den-zahntechniker/#>

click IPS e.max® CAD Labside → open PDF file

■ Chemical composition

SiO ₂ (in %)	Li ₂ O	K ₂ O	P ₂ O ₅	ZrO ₅	ZnO	Al ₂ O ₃	MgO	Pigments
> 57	k. A.	k. A.	k. A.	k. A.	k. A.	k. A.	k. A.	k. A.

■ Physical properties (guidelines)

CTE value (Coefficient of linear expansion) α (20 - 400°C)	10.2	[10 ⁻⁶ K ⁻¹] or [10 ⁻⁶ C ⁻¹]
CTE value (Coefficient of linear expansion) α (20 - 600°C)	10.5	[10 ⁻⁶ K ⁻¹] or [10 ⁻⁶ C ⁻¹]
Elasticity modulus (at 20°C)	95,000	[MPa] or [N/mm ²]
Vickers hardness (HV 10)	5,800	[MPa] or [N/mm ²]
Flexural strength β_B (biaxial)	360	[MPa] or [N/mm ²]
Fracture toughness K_{Ic}	2.25	[MPa \sqrt{m}]
Chemical solubility L	40	[$\mu\text{g}/\text{cm}^3$]

■ Thermal properties

Crystallisation temperature T_K	840 - 850 [°C] or 1544 - 1562 [°F]
-----------------------------------	--------------------------------------------------