The making of IPS e.max

Ivoclar Vivadent, all of us are passionately inspired to develop dynamic new materials, technologies, products, and processes that are the easiest-to-use and deliver the most reliable and esthetic results. More than 15 years ago, our vision and collaborative approach to research and development led to the high-quality solution that remains widely recognized as the standard for contemporary all-ceramic dentistry: IPS e.max lithium disilicate.

In creating IPS e.max® Press and IPS e.max CAD, our people and our research team spent countless hours developing this high-quality, stronger, and more esthetic material. In doing so, we constantly assessed our products and our processes to best respond to our customers' needs. We challenge ourselves every day to create better, more effective, and more efficient restorative processes for you. As a result, IPS e.max lithium disilicate is now among the best known and most widely used types of glass ceramics.

Today, when it matters, dental professionals around the world enthusiastically make it IPS e.max. That's because Ivoclar Vivadent is committed to making the best esthetic, high-strength options for every day dentistry. Patients are delighted with the superior esthetic quality of their restorations and appreciate the care provided by their dentist and dental laboratory.

The pressable IPS e.max lithium disilicate is meticulously produced according to a unique bulk casting production process to create the ingots. This requires a continuous glass technology manufacturing process that involves melting, cooling, simultaneous nucleation of two different crystals, and growth of crystals. To impart the desired color to the lithium disilicate material, polyvalent ions that are dissolved in the glass are utilized. These color-producing ions are homogeneously distributed, thereby eliminating color imperfections. Throughout production, our team constantly monitors and optimizes the processes to ensure high quality and consistency.

Machineable IPS e.max CAD lithium disilicate blocks are manufactured according to a similar process, but only partial crystallization is achieved so the blocks can be milled efficiently in Ivoclar Vivadent's signature translucent blue crystalline intermediate phase. This transitional crystallization process forms the lithium metasilicate crystals that impart the material's processing properties, relatively high strength, and good edge stability. Similar to the pressable IPS e.max lithium disilicate, the millable IPS e.max CAD blocks appear blue during the crystalline intermediate phase and achieve their desired color and opacity during the post-milling firing process. It is also after firing that they reach their final crystallized state and their desired high strength.

The success of the original IPS e.max Press and IPS e.max CAD products was only a glimpse at the potential success and demand for these lithium disilicate materials. Since then, Ivoclar Vivadent have continued its innovative efforts to meet the needs of today's dentistry, in particular by exploring and implementing new serial production processes. As a result, IPS e.max Press Multi polychromatic ingots make fabrication and production of crowns and other restorations faster, easier, and more predictable, while still exhibiting a completely natural-looking graduation of shade and translucency.

For dentists and dental laboratories, restorations that are easy to create, strong and durable, and exhibit convincing esthetic properties are welcome solutions for providing high-quality dentistry – the world speaks e.max !

If you want to share your IPS e.max case with us, please contact us…

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