



**Klausz Dental
Laboratories Ltd.**

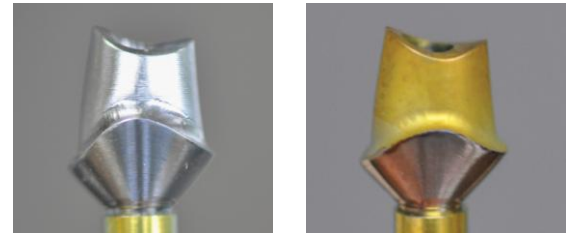
Working **harder and smarter** for your practice!

www.klauszdentallab.com • klauszdl@uniserve.com • Tel: 416-630-6262 • 1-800-410-4392
40 Kodiak Crescent • Units 11-12 • Toronto, ON • Canada M3J 3G5

An O.I.C.S. Specialty Laboratory *Occlusion - Implants - Cosmetic - Sleep*

Anodizing Titanium To Make Your Implant Abutments More Aesthetic

Titanium anodizing is an electrolytic finishing process that manipulates the oxide layer on the surface of titanium. This allows us to add a warm gold colour to your titanium abutments, improving the shade of the final restoration from the inside and eliminating the grey show through of metal abutments below the tissue surface.



The medical and dental device industry has widely used this titanium anodizing process, since anodized titanium parts are nontoxic and suitable for biomedical applications such as orthopedic and dental implants.

How does anodizing work with titanium?

Anodizing is an electrochemical process that uses both electricity and chemistry to manipulate the oxide layer of titanium. The titanium part, serving as the anode (positive electrode), is immersed in an aqueous electrolyte solution such as trisodium phosphate (TSP) or various salts. When electrical current is applied, water molecules undergo hydrolysis and split into hydrogen and oxygen. The electrical potential forces the oxygen to the titanium surface, adding to the thin layer of titanium oxide.



The final perceived colour depends on the thickness of the oxide layer, which can be adjusted by varying the voltage and the immersion time. The titanium oxide layer gives the perception of colour due to an interference phenomenon, similar to a prism. Light reflects from both the oxide layer and the underlying titanium at different angles and those reflections interfere with each other. Certain wavelengths of light cancel each other out or combine, so that the remaining light is perceived as colour. No dyes are required to produce the colour perception, thus adding to the biomedical safety of the finished part.



Helping our clients achieve the very best clinical outcomes, is just another way we are,
“Working Harder and Smarter for your Practice!”