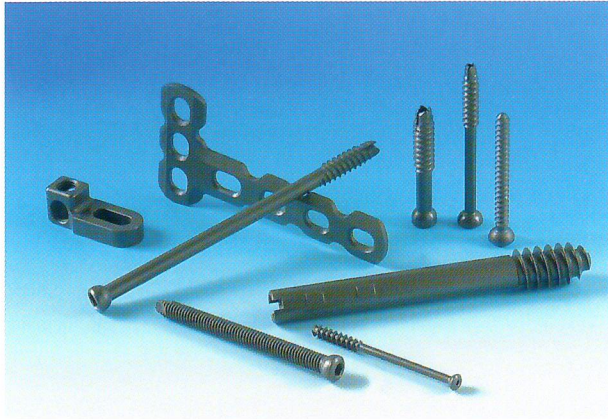


Biodize® – Alkaline anodisation of titanium



Titanium implants processed with *Biodize*®.

Applications

- > Medical: Orthopaedic implants, particularly well adapted for parts to be explanted later on.
- > Precision mechanic, watch industry: *Biodize*® takes the function of dry lubricant for titanium
- > Spatial and aeronautics: *Biodize*® was originally developed for space applications as anti-seizing and lubricant layer. *Biodize*® is also used as a base for a subsequent P.T.F.E. dry lubrication.

Biodize® is a product from the INNOSURF department, the innovation centre for the Estoppey-Reber group.

***Biodize*® is an alkaline anodic oxidation of titanium following the normalizes AMS 2488c.**

The process has primary been applied for spatial applications due to the low density of titanium and its anti-seizing capabilities.

The coating is constituted of a titanium oxide layer formed by the transformation of the metallic surface into TiO₂ oxide. The layer presents an oxide concentration gradient ranging from a rich TiO₂ composition at the extreme surface to pure titanium near the substrate limit. The layer's thickness is about 3 µm which is tenth to hundredth times thicker than in the case of coloured anodisation.

Its principal characteristics are:

- > Anti-seizing and good friction resistance
- > Fretting prevention and wear reduction
- > Improvement of 15% to 20% on repetitive loadings resistance
- > Good thickness homogeneity all around the parts
- > Rework possibilities without removal of the primary damaged layer
- > *Biodize*® is perfectly biocompatible and implantable
- > Easily identifiable from stainless steel parts thanks to its gray colour

Biodize® can be applied to pure titanium and its alloys (TAV and TAN).