



OSSEOMATRIX® Titanium Foam

SUMMARY

OSSEOMATRIX® Ti foam is available immediately from Orchid Orthopedic Solutions (Memphis, TN) for applications as a coating onto Ti-6Al-4V alloy or for stand-alone medical implants.

CHARACTERISTICS

OSSEOMATRIX® is cancellous, bone-like, fully porous Ti foam which possesses an open cell structure (Figure 1). The metallized foam can be machined into desired size and shape using wire EDM. Additionally, Orchid has a trade-secret machining process to produce implants that cannot otherwise be produced with wire EDM, or where a rough surface is desired.

TYPICAL PROPERTIES

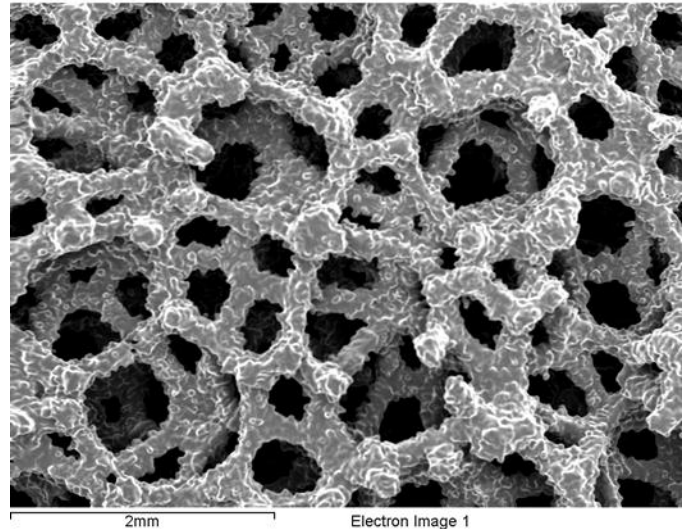
The properties of OSSEOMATRIX® are detailed below. These properties are typical expected values; the exact values will depend on the individual applications, in part determined by size and geometry of the implants.

TABLE I – OSSEOMATRIX® Pore Characteristics

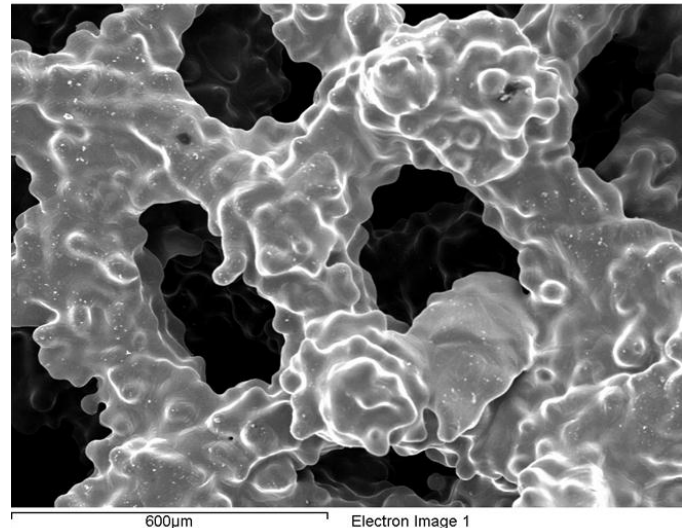
Volumetric Porosity (%)	45 - 75
Pore Size (μm)	200 - 600

Coatings are typically 1.5 mm thick, and stand-alone implants can be approximately 1.5 mm to 15 mm thick. The lateral dimensions of the stand-alone material can be up to 100 mm.

OSSEOMATRIX® exceeds 20 MPa requirements for tensile strength and static shear strength of the FDA Guidance Document [1]. Generally, we can reach minimum tensile strength of 35 MPa (5,000 psi).



(a)



(b)

Figure 1: Low (a) and high (b) magnification SEM images of OSSEOMATRIX®.

1. FDA Guidance Document –for testing Orthopedic Implants with Modified Metallic Surfaces Apposing Bone or Bone Cement.