

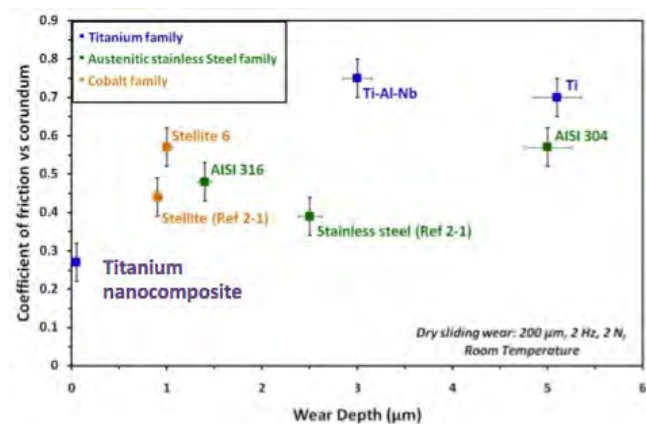
Advanced Materials Biomedical Grades (Ti-TiC)

Introduction

MBN will design and scale-up a High Energy Ball Milling (HEBM) process to enable the production of advanced materials with fine and homogeneous chemical distribution of elements and an “ultrafine” crystalline structure down to the nanometre scale.

PilotManu is developing a metal titanium matrix reinforced with ceramic biocompatible materials. This reinforcement enables high hardness, high compactness and density of coatings deposited by cold gas spraying (CGS). The polished surface ensures a low coefficient of friction and a good behaviour in sliding wear conditions.

The Ti nanocomposite coatings when applied by CGS to Ti substrates meets the biocompatibility requirements set by ISO specifications.



Specification

Nominal composition	Unit	Value
Titanium matrix	%	35
Reinforcements	%	65

Physical Characteristics

Powder size	Unit	Value
Sieve	µm	-40+15
Powder density		
Skeletal - ASTM B923	g/cm ³	4.3
Bulk - ASTM D7481-09	g/cm ³	1.8
TAP - ASTM B527	g/cm ³	2.4

Different powder sizes are available

Coating performance

	Unit	Value
Hardness	HV	640
Adhesion F-1147	MPa	>30
Thickness	µm	350
Porosity	%	< 2.0
Taber ASTM F1978	Within standard	

Contact

If you are interested in evaluating the new advanced powders developed by PilotManu, please contact: info@pilotmanu.eu



PILOTMANU

www.pilotmanu.eu

Partner

MBN nanomaterialia®



PilotManu is funded by the EU FP7 programme and the consortium partners. Project full title: Pilot manufacturing line for production of highly innovative materials