

# Advanced Materials CerMet Powder (Ti-WC)

## 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 will develop next generation CerMet materials that exploit phase change properties between Ti and WC to enable outstanding mechanical properties. The physical characteristics of the starting material make this powders suitable both for coatings and sintered applications.

## Suitable processing technologies

- Coatings: CGS
- Sintering: Standard and advanced techniques

## Advantages

- Similar hardness compared to WC-Co but with reduced weight
- High deposition efficiency and thick Coating (up to 2mm)
- High compactness
- Enhanced tribology

## Applications

- Automotive: deposition on Mg parts
- Extrusion dies
- Rolling mills

## Specification

Nominal composition	Unit	Value
Titanium	wt%	23.0
Tungsten Carbide	wt%	77.0
<b>Power density</b>		
Skeletal - ASTM B923	g/cm <sup>3</sup>	9.5

## Physical Characteristics

	Unit	Value
Hardness after SPS	HV	1350
Hardness after CGS	HV	800
Hardness after HT	HV	1250

## Contact

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



PILOTMANU

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Partner

MBN nanomaterialia®



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