

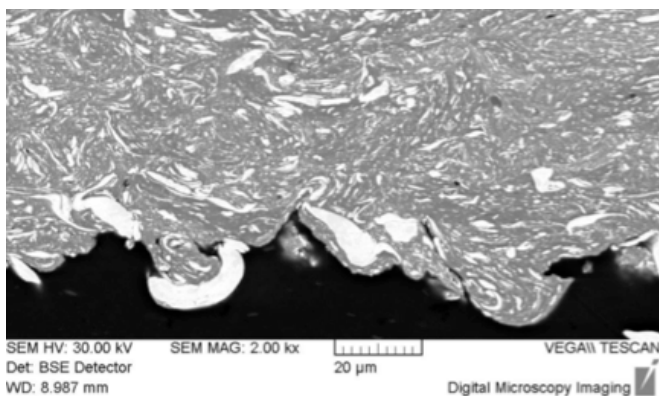
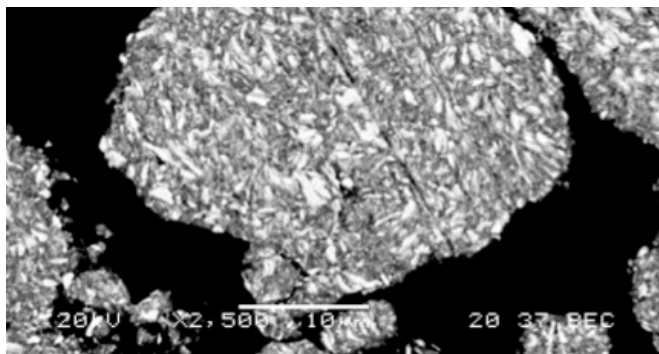
# Advanced Materials Special Alloys (W-Cu)

## 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 several variants with different content of Tungsten. Higher Tungsten content results in increased hardness, while increasing Copper allows better control on electrical properties and ductility.

These materials can be used in applications requiring a combination of high electrical conductivity, low thermal expansion and resistant to erosion by electric arc.



## Specification

Nominal composition	Unit	From	Value
Copper	wt%	70.0	10.0
Tungsten	wt%	30.0	90.0
Powder size for CGS	μm	15-38	15-38

## Physical Characteristics

Powder size	Unit	Value
Hardness of powders	HV	400
Flowability-ASTM B2113	s	400
<b>Powder density</b>		
Skeletal - ASTM B923	g/cm <sup>3</sup>	14.3
Bulk - ASTM D7481-09	g/cm <sup>3</sup>	6.6
TAP - ASTM B527	g/cm <sup>3</sup>	7.5

*Analysis performed on W-25Cu.*

*Different powder sizes are available on request.*

## Benefits

- Customized formulation according to application requirements
- Dispersion down to nano-level of elemental materials
- Stable and aggregated morphology
- Improved dispersion of elements

## Contact

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



PILOTMANU

[www.pilotmanu.eu](http://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