Product Technical Information

Sprayable Superfine Tungsten Carbide Cobalt – Infralloy™ Thermal Spray Powder S7412

[U.S. Patent Nos. 6,277,774 6,576,036] 7,238,219

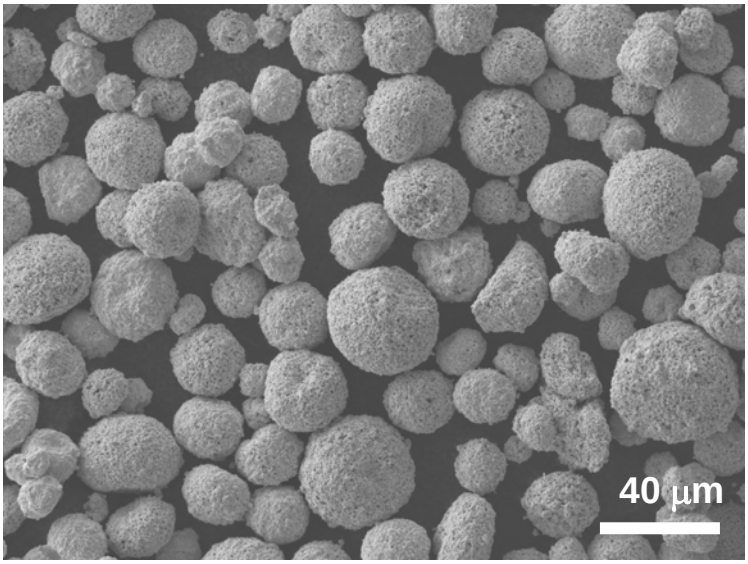
Thermal Spray Grade

Tungsten carbide cobalt is a ceramic-metal (cermet) composite material used as a wear resistant coating. The alloyed form gives superior hardness. Infralloy™ powder is made from WC nanoparticles alloyed with a cobalt binding matrix phase.

Infralloy™ S7412 powder is available as agglomerated particles with dimension $5 < \Phi < 45$ μm with high flowability for HVOF thermal spray applications.

Morphology

SEM micrograph typical of Infralloy™ S7412 feedstock powder showing spherical geometry with high flowability.



Infralloy™ S7412 Properties

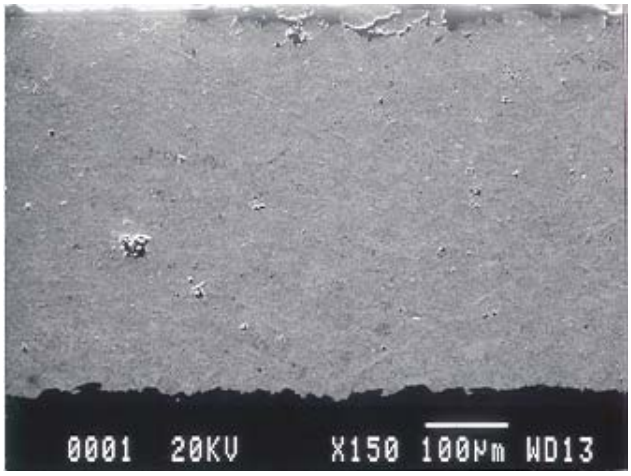
WC: Co wt ratio	88: 12
Alloy content	< 1 %
Particle size μm	0.1 - 0.5
Agglomerated size (μm)	-45 to +5
Coating hardness (VHN)	1100 -1250

1 micron (μm) = 10^{-6} meter (m)

Note: other particle sizes: e.g., -45 to +5 microns, or =15 to -38 microns, are also available through customer special ordering depending on requests.

Coating Microstruture

Cross sectional SEM view of a typical very dense carbide coating produced by a Metco HVOF gun using Infralloy™ S7412 feedstock powder. Pores (dark spots) occupy only ~ 1% volume.



Suggested Applications

Inframat® Infralloy™ S7412 powder is a superior coating material providing wear-, erosion-, and corrosion-resistant surfaces where excellent to exceptional fracture toughness is required.

The Thermal Spray Grade material can be applied with DC Arc plasma and HVOF guns. Full spray specifications are available through Technical Applications Bulletins Nos. S7412.10B.

Contact Information

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