

# Product Technical Information

## Sprayable Superfine Tungsten Carbide Cobalt –Chromium Infralloy™ S7410 Thermal Spray Powder

[U.S. Patent Nos. 6,277,774 ; 6,287,714; 6,576,036;  
7,238,219; 7,537,636; 7,625,542 ]

### Thermal Spray Grade

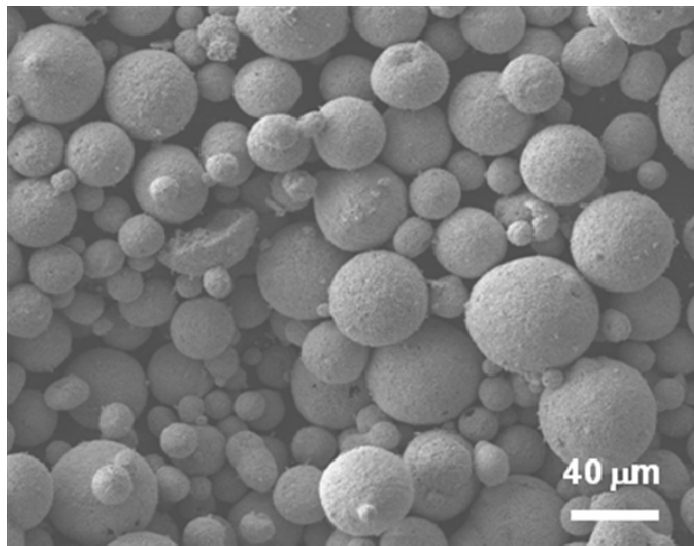
Tungsten carbide/cobalt-chrome is a ceramic-metal (cermet) composite material used as a wear resistant coating. The alloyed form gives superior hardness. Infralloy™ powder is made from WC nanoparticles alloyed with a cobalt-chromium binding matrix phase.

Infralloy™ S7410 powder is available as agglomerated particles with dimension  $5 < \Phi < 45 \mu\text{m}$  with high flowability for HVOF thermal spray applications.

### Morphology

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SEM micrograph typical of Infralloy™ S7410 feedstock powder showing spherical geometry with high flowability.



## Infralloy™ S7410 Powder

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WC: Co wt ratio	86:10
Cr%	4%
Alloy content	< 1 %
Particle size $\mu\text{m}$	0.1 - 0.5
Agglomerated size ( $\mu\text{m}$ )	-45 to +15
Coating hardness (VHN)	950 -1200

1 micron ( $\mu\text{m}$ ) =  $10^{-6}$  meter (m)

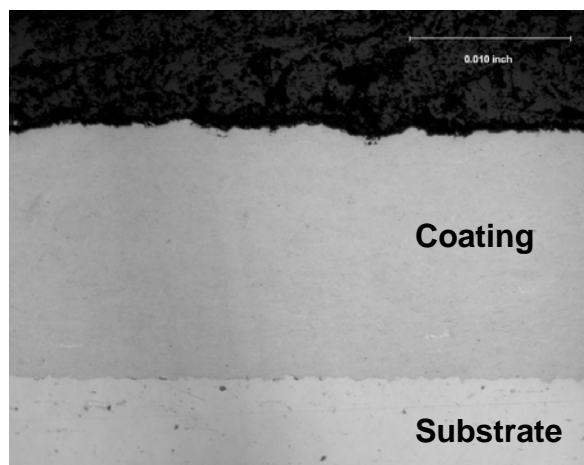
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Note: other particle sizes: e.g., -45 to +5 microns, -53 to +10 microns, or =15 to -38 microns, are also available through customer special ordering depending on requests.

## Coating Microstruture

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Cross sectional optical view of a typical very dense carbide coating produced by a Metco HVOF gun using Infralloy™ S7410 feedstock powder. Pores (dark spots) occupy only ~ 1% volume.



## Suggested Applications

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Inframat® Infralloy™ S7400 Series powder is a superior coating material providing wear-, erosion-, and corrosion-resistant surfaces where excellent to exceptional fracture toughness is required. The S7410 is an excellent candidate for chrome replacement coatings.

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. S7410.10B.

## Contact Information

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