Product Technical Information

Sprayable Superfine Tungsten Carbide/Metal Alloy Infralloy™ F7480 Thermal Spray Powder

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Thermal Spray Grade

Tungsten carbide/metal alloy is a metal-ceramic- (cermet) combined with a fluxed alloy composite material used as a high performance wear, erosion, impact, and corrosion resistant coating. The alloyed form gives superior hardness. Infralloy™ F7480 cermet powder is made from tungsten carbide nanoparticles (0.1-1 μm) alloyed with a cobalt binding matrix phase, followed by blending with a metal alloy flux phase to ensure high hardness and density coatings.

Infralloy™ F7480 powder is available as agglomerated particles with dimension $15 < \Phi < 45$ μm with high flowability for HVOF thermal spray applications.

Infralloy™ F7480 Powder

Chemistry

WC	70.4wt%
Co	9.6wt%
Cr	2.9wt%
Fe	0.9wt%
Si	0.9wt%
B	0.6wt%
Ni	Rem
Other alloy additives	<1 wt%

Other Properties

Particle size (μm)	0.1-0.5
Agglomerate size (μm)	-45 to +15
Hardness (VHN)	700-950

1 micron = 10^{-6} meter 1 nanometer = 10^{-9} meter

Suggested Applications

Infralloy™ F7480 tungsten carbide/cobalt blended with flux metal-alloy powder is a superior coating material providing wear-, erosion-, and corrosion-, and impact-resistant surfaces where excellent to exceptional fracture toughness is required. Compared to F7435 and F7450, it has a higher WC/Co phase, attributing to higher hardness, and erosion/wear resistance.

It is considered for heavy duty equipment coatings, such as still mills, petroleum drilling tools, and automotive parts, where high wear, erosion, and corrosion resistant properties are paramount.

The Thermal Spray Grade material can be applied with DC Arc plasma, HVOF, or an old-fashioned handguns.

The processed coatings can also be post treated by fusing via a fusing torch adjusted at neutral flame. After fusing, the coating will be extremely dense with near pore or defect free coatings or metallurgical bonds between splats.

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Contact Information

Inframat® Corporation, 151 Progress Drive, Manchester, CT 06042
1-888-NANO-888, or (860) 432-3155, fax: (860) 432-3722, web: www.inframat.com, email: info@inframat.com