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## Infralloy™ S7410 Tungsten Carbide/Cobalt 86WC/10Co-4Cr Thermal Spray Powder

### SUMMARY

Infralloy™ S7410 is a tungsten carbide/cobalt (WC/Co-Cr) powder. Its chemistry is 86wt%WC, 10wt%Co, and 4wt%Cr. Particle size is in the range of:

Praxair JP5000 system:	-45 to +15 microns
Metco DJ 2700 hybrid:	-45 to +5 microns, -53 to +10 miron

Other particle size for plasma spray gun system can also be obtained, *e.g.*, -45 to +10 microns, can be obtained depending on customers' specific needs.

### SUGGESTED COATING SPRAY SYSTEMS

Metco DJ 2700, Praxair JP5000, or detonation, etc.

### SUGGESTED APPLICATIONS

Coatings of Infralloy™ S7410 are recommended for the following applications

#### Typical Applications

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- |                           |   |
|---------------------------|---|
| <b>Wear resistance</b>    | Bearing surfaces, knife edges, conveyor screws, thread guides, impeller shafts, anti-galling sleeves, exhaust fans, oil field ball/gate valves, aircraft flap tracks, turbine compressor stators, turbine mid-span supports (fan blades), turbine fan duct segments, rollers (steel making or printing), mining tools |
| <b>Chrome Replacement</b> | Gun barrels, landing gears, rollers (steel making or paper/printing), replacement of non-line-of sight (NLOS) of hard chrome electroplated components, etc  |

### POWDER CHARACTERISTICS

<b>Typical Composition:</b>	WC:Co:Cr wt ratio	86 : 10 : 4
	Alloy elements	<1%
<b>Particle size:</b>	-45 to +5 microns for DJ 2700 Metco Or -45 to +15 microns for Praxair JP5000	
<b>Eutectic Temperature</b>	1320°C	



## Infralloy™ S7410 Tungsten Carbide/Cobalt-Chromium 86WC/10Co-4Cr

### TYPICAL PHYSICAL PROPERTIES OF THE COATINGS

Textures of as-sprayed	120-200 microinches
Ground surface	2-4 microinches
Cross Section Microhardness	950-1150 VHN <sub>300</sub>
Bond strength (low carbon steel coupons)	>12,000 psi

### WEAR RESISTANCE

This coating is suitable for high wear resistant surface application where high toughness is required

### POST SPRAY FINISHING

Coatings of Infralloy™ S7410 are best finished by grinding. Finishing of 2-4 micron inch of surface can be achieved.

### TYPICAL STARTING SPRAYING PARAMETERS

#### Hybrid DJ 2700 using Propylene

Hardware	Pressure psig			Folwmeter Reading (FMR)			Powder Feeder (DJP)			Spray		Application rate inches/pass
	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	Air	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	Air	N <sub>2</sub> FMR	N <sub>2</sub> SCFH	Air psig	Rate lbs/h	Dist inch	
DJ2701	150	100	100	40	40	48	55	150	20	5	9	<0.0005

#### Hybrid DJ2600 using hydrogen

Hardware	Pressure psi			Folwmeter Reading (FMR)			Powder Feeder (DJP)			Spray		Application rate inches/pass
	O <sub>2</sub>	H <sub>2</sub>	Air	O <sub>2</sub>	H <sub>2</sub>	Air	N <sub>2</sub> FMR	N <sub>2</sub> pressure psi	Air psi	Rate lbs/h	Distance inch	
DJ2603	170	150	100	32	62	46	55	150	20	5	9	<0.0005

#### Standard DJ 9A using Propylene

Hardware	Pressure psi			Folwmeter Reading (FMR)			Powder Feeder (DJP)			Spray		Application rate inches/pass
	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	Air	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	Air	N <sub>2</sub> FMR	N <sub>2</sub> Pressure psi	Air psi	Rate lbs/h	Distance inches	
DJ3-9	150	100	75	43	38	47	55	125	20	5	7	<0.0005



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### POWDER HANDLING

Wear a mask and gloves when pouring powders into the feeder or discharging from the feeder

### SAFETY MEASURES IN SPRAYING

Thermal (plasma) spray is a completely safe process when performed in accordance with Equipment Safety Measures. Familiarize with yourself with local safety regulations before start spray operations. When spraying it is recommended always have at least two personnel on sight.

DISREGARDING TO THESE SAFETY INSTRUCTION MAYBE DANGEROUS TO YOUR HEALTH