

# Bulletin

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## Powder Characteristics

### *TAFE 1350VF Tungsten Carbide – 10 Cobalt – 4 Chromium*

#### Nominal Composition: % Weight

Tungsten Carbide	86
Cobalt	10
Chromium	4

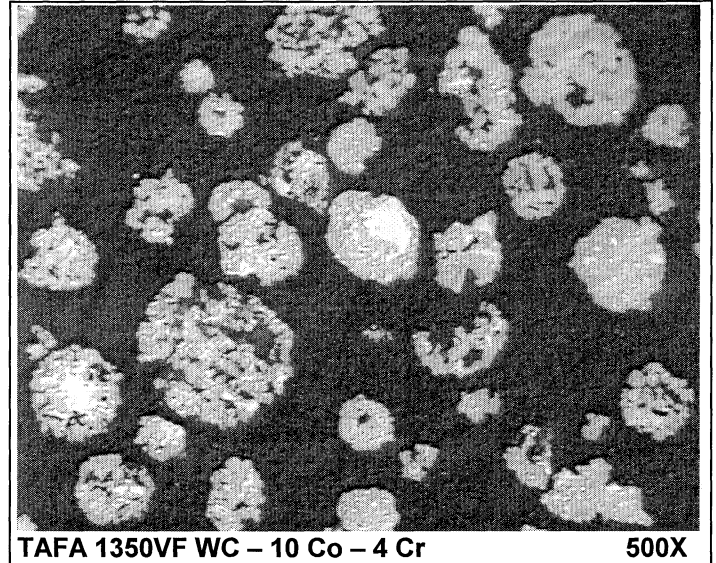
**Powder Type:** Spray Dried & Sintered

**Particle Shape:** Mainly Spherical

**Particle Size:** -325 mesh (-44 $\mu$ )

**AD** (g/cm<sup>3</sup>) (ASTM B-212) typical: 3.81

**HF** (sec/50g) (ASTM B-213) typical: 12.5



#### **Overview:**

This powder has been made exclusively for high velocity thermal spraying. TAFE 1350VF powder is used to produce dense, hard and tough coatings that are suited to many applications. These include sliding wear, erosion, impingement, abrasion and fretting wear. The resulting coatings show excellent wear and corrosion resistance in water based solutions due to the addition of Chromium. TAFE 1350VF can be used in the TJ-4000 HVOF, JP-5000<math>\leftrightarrow</math>ST HP/HVOF and the Diamond Jet™.

#### **Typical Applications:**

- Oil field apparatus
- Repair of feed screws, gas transmission equipment, and induced draft fans
- Hydraulic cylinders
- Paper rolls
- Compressor shafts
- Hydroelectric applications such as: pelton wheel buckets, francis turbine runners and needle valves and seats

Consult your TAFE coatings application engineer for help in solving your specific coating requirements.

**Typical High Velocity Applied Coating Properties\*:**

Finish	As Sprayed	170 $\mu$ in R <sub>a</sub>
	Ground	Less than 10 $\mu$ in R <sub>a</sub>
Bond Strength		10,000 psi (Epoxy failure at 0.015" thickness)
Hardness -	Superficial	90- 92 R <sub>15N</sub>
	Macro	64 - 68 R <sub>C</sub>
	Micro	940 - 1400 DPH <sub>300</sub>
Microstructure -	Porosity	1 - 4%
	Oxides	1 - 5%

\*For more specific coating data, see the Coating Properties Bulletin for each particular system (JP-5000<>ST, AF-3000, TJ-4000).

**The information provided herein is believed to be accurate and reliable; however, results may vary with workpiece preparation and operator technique. TAFE warrants only that the powders are free of defects in material and workmanship. No other warranty is expressed or implied.**

**Hazards:**

Observe normal spraying practices. Respiratory and hearing protection is advised. For general guidelines see AWS Publication C2.1-73, and AWS TSS-85. Thermal spraying is a safe process when performed in accordance with proper safety measures.

**TAFE Delivers Your “Operating Advantage”**

TAFE's primary objective is to ensure you consistently get the coating quality you require...with greatest application ease...at the lowest coating costs. TAFE accomplishes this by engineering the most advanced thermal spray materials and equipment available.

***Coating Performance + Ease-of-Use + Low Costs =  
“Operating Advantage”***

**For further information** on HVOF coatings, equipment and supplies, as well as other thermal spray processes and custom automated systems, contact: