

**TUNGSTEN CARBIDE POWDER
Cobalt Coated**

1. SCOPE:

1.1 Form: This specification covers cobalt-coated tungsten carbide in the form of powder.

1.2 Application: Primarily for producing plasma spray coatings to provide wear and fretting resistant surfaces.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM B214 - Sieve Analysis of Granular Metal Powders

ASTM B215 - Sampling Finished Lots of Metal Powders

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

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3. TECHNICAL REQUIREMENTS:

- 3.1 Composition: Powder particles shall consist of a tungsten carbide core enclosed in a cobalt jacket. Composition shall conform to the following percentages by weight, determined by methods agreed upon by purchaser and vendor:

	min	max
Free Carbon (3.1.1)	--	0.03
Combined Carbon	6.12 -	6.15
Total Carbon	6.12 -	6.18
Cobalt	10.50 -	13.50
Iron	--	0.05
Other Impurities, each (3.1.1)	--	0.01
Other Impurities, total (3.1.1)	--	0.15
Tungsten	remainder	

- 3.1.1 Determination not required for routine acceptance.

- 3.2 Condition: As manufactured.

- 3.3 Properties: Powder shall conform to the following requirements:

- 3.3.1 Particle Size Distribution: Powder shall be supplied with the following particle size distribution. Sieve analysis shall be conducted in accordance with ASTM B214; subsieve (micron) analysis shall be conducted in accordance with a method approved by purchaser.

Mesh or Micron Size*	% By Weight	
	min	max
-270 mesh (46 μ m)	100.0	--
+325 mesh (45 μ m)	--	0.5
- 30 μ m	80.0	--
- 20 μ m	--	20

* + indicates retained on sieve
- indicates passing through sieve

- 3.3.2 Plasma Spraying: Powder shall produce acceptable spray coatings; standards for acceptance and method of test shall be as agreed upon by purchaser and vendor.

- 3.4 Quality: Powder, as received by purchaser, shall be thoroughly blended, uniform in color and quality, dry, and free from foreign materials and from imperfections detrimental to its spraying qualities.