



AEROSPACE MATERIAL SPECIFICATION

AMS7879™

REV. G

Issued	1970-11
Reaffirmed	2006-07
Revised	2020-04

Superseding AMS7879F

Tungsten Carbide-Cobalt Powder

RATIONALE

AMS7879G prohibits unauthorized exceptions (3.5) and revises properties (Table 2), classification of tests (4.2), reports (4.5.1), and identification (5.1.1, 5.1.3), and results form a Five-Year Review and update of this specification.

1. SCOPE

1.1 Form

This specification covers tungsten carbide-cobalt in the form of powder.

1.2 Application

This powder has been used typically for producing plasma spray coatings to provide wear and fretting resistant surfaces, but usage is not limited to such applications.

1.3 Classification

This specification defines four classes of tungsten carbide cobalt powder:

- Class 1 Cast (fused) and crushed
- Class 2 Sintered and crushed
- Class 3 Composite
- Class 4 Other as specified

When no class is specified, Class 1 shall be supplied.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

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For more information on this standard, visit
<https://www.sae.org/standards/content/AMS7879G>

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19248-2959, Tel: 610-832-9585, www.astm.org.

ASTM B214 Sieve Analysis of Metal Powders

ASTM B215 Sampling Metal Powders

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by methods acceptable to purchaser.

Table 1 - Composition

Element	Min	Max
Carbon	3.90	4.30
Cobalt	10.00	12.00
Iron	--	2.00
Tungsten	remainder	

3.2 Condition

- Class 1 Cast (fused) and crushed
- Class 2 Sintered and crushed
- Class 3 Composite
- Class 4 Other manufacturing process as specified

3.3 Properties

Powder shall conform to the following requirements:

3.3.1 Particle Size Distribution

Powder shall be supplied with the particle size distribution shown in Table 2. Sieve analysis shall be conducted in accordance with ASTM B214; subsieve (micron) analysis shall be conducted in accordance with a method approved by purchaser.

Table 2 - Particle size distribution

Mesh or Micron Size*	Percent by Weight	Percent by Weight
	Min	Max
-270 mesh (53 μm)	100.0	--
+325 mesh (45 μm)	--	0.5
- 20 μm	70.0	--
- 5 μm	--	10

* + 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 agreed upon by purchaser and producer.