



AEROSPACE MATERIAL SPECIFICATION

AMS7881™**REV. B**

Issued 2003-04
Reaffirmed 2013-07
Revised 2020-05

Superseding AMS7881A

Tungsten Carbide-Cobalt Powder
Agglomerated and Sintered

RATIONALE

AMS7881B prohibits unauthorized exceptions (3.5), revises properties (3.3.2), classification of tests (4.2), reports (4.5.1), and identification (5.1.3), and results from 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 thermal spray coatings to provide wear and fretting resistant surfaces, but usage is not limited to such applications.

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.

AMS2448 Application of Tungsten Carbide Coatings on Ultra High Strength Steels, High Velocity Oxygen/Fuel Process

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2020 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE AMS7881B

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS7881B>

Documents

Documents Sharing Hub

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B215 Sampling Metal Powders

ASTM B822 Particle Size Distribution of Metal Powders and Related Compounds by Light Scattering

ASTM MNL32 Test Sieving Methods

3. TECHNICAL REQUIREMENTS

- 3.1 Composition shall conform to the percentages by weight shown in Table 1, determined by methods acceptable to the cognizant engineering organization.

Table 1 - Composition, percent by weight

Element	Min	Max
Cobalt	15.0	18.5
Carbon, Total	4.8	5.6
Tungsten	Balance	
Iron	—	1.5
Others (if determined)	—	0.5

- 3.2 Condition shall be as manufactured.

3.3 Properties

Powder shall conform to the following requirements:

- 3.3.1 Particle size distribution shall be as shown in Tables 2 and 3. Each lot shall show the following cumulative Table 2 volume percentages when measured by laser light scattering method in accordance with ASTM B822 or other method acceptable to the cognizant engineering organization. See 8.2. Each lot shall have the cumulative Table 3 weight percentages using ASTM MNL32 as a guide or other method acceptable to the cognizant engineering organization. Measured distribution percentages can vary by application method. See 8.3.