



AEROSPACE MATERIAL SPECIFICATION

AMS4780™**REV. H**

Issued 1962-06
Reaffirmed 2007-01
Revised 2021-06

Superseding AMS4780G

Manganese Alloy, Brazing Filler Metal
66Mn - 16Ni - 16Co - 0.80B
1770 to 1875 °F (966 to 1024 °C) Solidus-Liquidus Range
(Similar to UNS M26800)

RATIONALE

AMS4780H is an update of table formatting to accommodate the new digital data system and allows the use of the two prior revisions (8.5) because of the non-technical update.

1. SCOPE

1.1 Form

This specification covers a manganese alloy in the form of powder, preforms, and a viscous mixture (paste) of the powder in a suitable binder.

1.2 Application

This filler metal has been used typically for joining corrosion and heat resistant steels and alloys where good ductility and moderate heat resistance are required, 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.

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

SAE Executive Standards Committee 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 © 2021 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 AMS4780H

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS4780H/>

Documents
Document 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 B214 Sieve Analysis of Metal Powders

ASTM E354 Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E354, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

Table 1 - Composition

Element	Min	Max
Carbon	--	0.06
Silicon	--	1.00
Nickel	14.00	18.00
Cobalt	14.00	18.00
Boron	0.50	1.10
Other Elements, each (3.1.1)	--	0.10
Other Elements, total (3.1.1)	--	1.00
Manganese	remainder	

3.1.1 Determination not required for routine acceptance.

3.2 Condition

The product shall be supplied in the following condition:

3.2.1 Powder

As fabricated.

3.2.2 Paste

Unless otherwise specified by the purchaser, shall consist of 84 to 90% by weight powder in a suitable binder and shall not contain flux.

3.2.3 Preforms

As fabricated.

3.3 Properties of Paste

3.3.1 Paste shall have a shelf life of not less than 6 months from date of manufacture; not more than thorough mixing shall be required to restore paste for use during that time.

3.3.2 Paste without flux shall leave no adherent residue when heated in a protective atmosphere to a temperature of 1200 °F (649 °C) or higher.