Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

AEROSPACE MATERIAL SPECIFICATION

AMS 7875

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Revised

CHROMIUM CARBIDE PLUS NICKEL-CHROMIUM ALLOY POWDER
$75Cr_2C_3$ + 25 (80Ni - 20Cr Alloy)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for producing plasma spray coatings to provide wear and fretting resistant surfaces.

3. COMPOSITION: Shall be a blend of 74.00 - 76.00% chromium carbide and 24.00 - 26.00% nickel-chromium alloy powders. The component powders, prior to blending, shall conform to the compositions of 3.1 and 3.2, respectively, and shall have particle size distribution as shown in 5.1 for each component powder.

3.1 Chromium Carbide:

	min	max
Free Carbon	--	0.20
Total Carbon	12.50	--
Silicon	--	0.10
Chromium	85.50	--
Iron	--	0.70

3.2 Nickel-Chromium Alloy:

	min	max
Carbon	--	0.25
Manganese	--	2.50
Silicon	--	1.50
Chromium	18.00	22.50
Nickel	76.00	80.00
Iron	--	1.00

3.3 When specified, vendor shall supply purchaser with an adequate quantity of component materials, as required in 3.1 and 3.2, for quality control checks.

4. CONDITION: As blended.

5. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

5.1 Particle Size Distribution: Each component powder shall have the following particle size distribution, determined before blending. Sieve analysis shall be conducted in accordance with ASTM B214; sub-sieve (micron) analysis shall be conducted in accordance with ASTM B293 or by an approved optical method.

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Chromium Carbide % by Wt min	Chromium Carbide % by Wt max	Mesh or Micron Size*	Nickel-Chromium Alloy % by Wt min	Nickel-Chromium Alloy % by Wt max
100	--	-270 mesh	100	--
--	1	+325 mesh	--	1
60	90	-20 microns	45	75
--	15	-5 microns	--	5

* + indicates retained on sieve
- indicates passing through sieve

5.2 Plasma Spraying: Powder shall be capable of producing acceptable plasma spray coatings to standards agreed upon by purchaser and vendor.

6. QUALITY: Material shall be thoroughly blended, uniform in color and quality, dry, and free from foreign materials and from imperfections detrimental to its spraying qualities.

7. REPORTS:

7.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements specified. This report shall include the purchase order number, material specification number, and quantity.

7.2 When coated parts requiring the use of this powder are supplied, the vendor of finished or semi-finished parts shall, unless otherwise specified, furnish with each shipment three copies of a report showing the purchase order number, this specification number, contractor or other direct supplier of powder, part number, and quantity. When powder for coating parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of powder to determine conformance to the requirements of this specification, and shall include in the report a statement that the powder conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

8. PACKAGING AND MARKING:

8.1 Material shall be packaged in 5 lb sealed containers to protect it from contamination during shipment and under normal dry storage conditions. Seals used on containers shall be so designed that they must be destroyed in order for the container to be opened.

8.2 Each container shall be permanently and legibly marked to give the following information:

CHROMIUM CARBIDE - NICKEL CHROMIUM ALLOY POWDER
AMS 7875
MANUFACTURER'S IDENTIFICATION_____
QUANTITY_____
LOT NO._____

9. APPROVAL:

9.1 A sample of the powder shall be approved by purchaser before powder for production use is supplied, unless such approval be waived by purchaser. Results of tests on subsequent lots of powder shall be essentially equivalent to those on the approved sample.

9.2 Vendor shall use ingredients, processing techniques, and methods of routine inspection on production material which are essentially the same as those used on the approved sample powder. If any change in ingredients, processing techniques, or methods of routine inspection is necessary, vendor shall submit a sample for reapproval unless purchaser grants written approval after review of a detailed statement of materials and processes used on the approved sample and those proposed. No production material made by the revised procedure shall be shipped prior to receipt of approval of such procedure.