

 <i>An SAE International Group</i>	AEROSPACE MATERIAL SPECIFICATION	 AMS7905	REV. C
		Issued 1991-04	
		Revised 2006-06	
		Cancelled 2010-12	
		Superseding AMS7905B	
Beryllium Bars, Rods, Tubing, and Shapes Optical Grade			

RATIONALE

AMS7905C has been designated Cancelled based on results of a survey to aerospace users and producers that the product is not being produced.

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1. SCOPE

1.1 Form

This specification covers beryllium in the form of bars, rods, tubing, and machined shapes fabricated from vacuum hot pressed powder.

1.2 Application

These products have been used typically for parts requiring a combination of high strength-to-weight ratio, high modulus of elasticity, high density, low oxide content, and good polishing characteristics, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials

While the materials, methods, applications and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards that may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

1.3.1 WARNING

Beryllium Product: Inhaling dust or fumes may cause chronic beryllium disease, a serious chronic lung disease, in some individuals. Cancer hazard. Over time, lung disease and cancer can be fatal. Target organ is primarily the lung.

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 724-776-4970 (outside USA), or www.sae.org.

AMS 2806 Identification, Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steel and Corrosion and Heat Resistant Steels and Alloys

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, or www.astm.org.

ASTM E 8 Tension Testing of Metallic Materials
ASTM E 112 Determining Average Grain Size
ASTM E 1417 Liquid Penetrant Examination
ASTM E 1742 Radiographic Examination

2.3 ASME Publications

Available from American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, or www.asme.org.

ASME B46.1 Surface Texture
ASME Y14.5M Dimensioning and Tolerancing

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1; beryllium oxide shall be determined by gas fusion; aluminum, iron, magnesium, silicon, and other elements by spectrochemical methods; and carbon by combustion. Beryllium shall be determined by difference. In case of disputes between analysis by different spectrochemical methods, IC plasma shall govern.

TABLE 1 - COMPOSITION

Element	min	max
Beryllium Oxide	--	0.7
Aluminum	--	0.07
Carbon	--	0.07
Iron	--	0.10
Magnesium	--	0.07
Silicon	--	0.07
Other Elements, each (3.1.1)	--	0.04
Beryllium	99.0	--

3.1.1 Determination is not required for routine acceptance of each lot

3.2 Condition

Hot pressed with secondary options of heat treatment, stress relief, and/or hot isostatic pressing (HIP) after hot pressing.

3.2.1 Surface Finish

If surface finish is not specified, the material shall be furnished with an as-sawed, as HIP, and/or machined surface. Machined surfaces shall have surface finish no greater than 110 Ra [125 microinches (3.2 μm) rms, center peak to peak] in accordance with ASME B46.1.