



AEROSPACE MATERIAL SPECIFICATION

AMS7918™**REV. B**

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Superseding AMS7918A

Beryllium Aluminum Alloy Investment Castings
64.9Be - 30Al - 3Ag - 1Co - 0.75Ge
As Cast

RATIONALE

AMS7918B has been declared "STABILIZED" by AMS Committee G Titanium and Refractory Metals. This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because this document contains mature technology that is not expected to change and thus no further revisions are anticipated.

NOTE: Previously, this document was Reaffirmed. The last technical update of this document occurred in January 2008. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to the specification, including exceptions listed on the certification. In many cases, the purchaser may represent a sub tier supplier and not the cognizant engineering organization.

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1. SCOPE

1.1 Form

This specification covers a beryllium aluminum alloy in the form of investment castings.

1.2 Application

These castings have been used typically for optical support structures and other parts requiring higher stiffness, damping capability, and lighter weight than cast aluminum alloys with similar strength levels, 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 which may be involved in such use. It is the 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.

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), www.sae.org.

AMS 2175	Castings, Classification and Inspection of
AMS 2360	Room Temperature Tensile Properties of Castings
AMS 2694	Repair Welding of Aerospace Castings
AMS 2804	Identification, Castings

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 E 8	Tension Testing of Metallic Materials
ASTM E 155	Reference Radiographs for Inspection of Aluminum and Magnesium Castings
ASTM E 439	Chemical Analysis of Beryllium
ASTM E 1417	Liquid Penetrant Testing
ASTM E 1742	Radiographic Examination

3. TECHNICAL REQUIREMENTS

3.1 Composition

Castings shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 439, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1 - COMPOSITION

Element	min	max
Beryllium	61.1	68.6
Silver	2.65	3.35
Cobalt	0.65	1.35
Geranium	0.55	0.95
Iron	--	0.20
Silicon	--	0.25
Other Elements (total)	--	0.30
Aluminum (3.1.1)	remainder	

3.1.1 Determination not required for routine acceptance.

3.2 Melting Practice

Castings and specimens shall be poured at casting vendor's facility either from a melt of a master heat, or directly from a master heat.

3.2.1 Revert (gates, sprues, risers, and rejected castings) may be used only in the preparation of master heats; revert shall not be remelted directly without refining for pouring of castings. Melting of revert creates a new master heat.

3.2.1.1 The metal for castings and specimens shall be melted and poured under vacuum without loss of vacuum between melting and pouring. When authorized by purchaser, protective atmosphere may be used in lieu of vacuum for pouring of castings.

3.2.2 Portions of two or more qualified master heats (See 3.4.2) may be melted together and poured into castings using a procedure authorized by purchaser.