SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS3751 REV. C

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Superseding AMS3751B

Microspheres, Hollow Glass

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

STABILIZED NOTICE

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1. SCOPE:

1.1 Form:

This specification covers hollow glass microspheres.

1.2 Application:

Primarily as a filler material in syntactic foam shapes or parts for dielectric applications.

1.3 Classification:

The hollow glass microspheres are classified according to nominal bulk density designated as 100 times the nominal weight in grams of a cubic centimeter of the microspheres.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

2.1 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM D 1214	Sieve Analysis of Glass Spheres
ASTM D 2841	Sampling Hollow Microspheres

2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.2.1 Military Standards:

MIL-STD-794 Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material:

The hollow microspheres shall be fabricated from high-purity, electrical-grade glass, forming hollow spheres 1.00 mm (0.039 inch) in diameter or smaller.

3.2 Finish:

Microspheres shall not be finished or coated. When specified, microspheres shall be finished for electrical compatibility with the resin system to be used.

3.3 Properties:

The product shall conform to the requirements of Table I; tests shall be performed on the product supplied and in accordance with specified test methods.

TABLE I

Requirement	Class Designation						Test Method
	15			22			
Bulk Density, g/cm^3	0.13	-	0.17	0.19	-	0.24	4.5.1
Particle Density, g/cm^3	0.20	-	0.25	0.30	-	0.36	4.5.2
Size Distribution, Sieve Analysis							ASTM D 1214
Weight retained on No. 80 mesh (180 µm) screen,%, maximum	6.0			6.0			
Weight passing through No. 400 mesh (38 µm) screen,%, maximum	40.0			30.0			
Surface Alkalinity, meq/g (1), maximum	0.50			0.40			4.5.3
Sinkers by volume,%, maximum	20.0			24.0			4.5.4
(1) meq = milliequivalent							