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AEROSPACE STANDARD

AS4491

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PLASTIC DISPOSABLE CARTRIDGE, PLUNGER, NOZZLES AND CARTRIDGE ASSEMBLY

1. SCOPE:

This SAE Standard covers empty cartridges, plungers, cartridge assemblies, and nozzles which are used to package, store, and dispense single or multiple component sealants, adhesives and other similar materials. This document defines the size, shape, composition, and function of the plastic molded cartridges, plungers, and cartridge assemblies. This document is not intended as a detailed manufacturing document.

1.1 Classification:

1.1.1 The cartridges shall be classified by size as follows (see Figure 1):

a. Size A - 2-1/2 fluid ounces (74 mL)
b. Size B - 6 fluid ounces (177 mL)
c. Size C - 8 fluid ounces (237 mL)
d. Size D - 12 fluid ounces (355 mL)
e. Size E - 20 fluid ounces (591 mL)

1.1.2 The nozzles shall be classified by size as follows (see Figure 2):

a. Size I - 4 in (102 mm) long, 1/8 in (3.2 mm) orifice
b. Size II - 4 in (102 mm) long, 1/16 in (1.6 mm) orifice

2. REFERENCES:

The following publications form a part of this standard 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 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue,Philadelphia, PA 19111-5094.

2.1.1 Federal Specifications:

L-P-390 Plastic, Molding and Extrusion Material, Polyethylene and Copolymers (Low, Medium, and High Density)

2.1.2 Federal Standards:

FED-STD-123 Marking for Shipment (Civil Agencies)

2.1.3 Military Standards:

MIL-STD-2073-1 DOD Materiel Procedures for Development and Application of Packaging Requirements

3. REQUIREMENTS:

3.1 General:

When materials are either stored in or dispensed from the cartridge assembly, the interference fit between the plunger and the cartridge shall be such that material does not leak past the plunger.

3.2 Capacity:

3.2.1 Size A shall have a minimum capacity of 2-1/2 fluid ounces (74 mL)

3.2.2 Size B shall have a minimum capacity of 6 fluid ounces (177 mL)

3.2.3 Size C shall have a minimum capacity of 8 fluid ounces (237 mL)

3.2.4 Size D shall have a minimum capacity of 12 fluid ounces (355 mL)

3.2.5 Size E shall have a minimum capacity of 20 fluid ounces (591 mL)

3.3 Dimensions:

3.3.1 Length:

3.3.1.1 Size A cartridge shall have an overall length of 3.875 in ± 0.125 (98.4 mm ± 3.2)

3.3.1.2 Size B cartridge shall have an overall length of 7.000 in ± 0.125 (177.80 mm ± 3.18)

3.3.1.3 Size C cartridge shall have an overall length of 8.938 in ± 0.125 (227.02 mm ± 3.18)

3.3.1.4 Size D cartridge shall have an overall length of 12.313 in ± 0.125 (312.75 mm ± 3.18)

3.3.1.5 Size E cartridge shall have an overall length of 9.875 in ± 0.125 (250.82 mm ± 3.18)

3.3.1.6 The plunger shall be long enough to ensure it does not slip or turn over inside the cartridge when air pressure is applied.

3.3.2 Diameter:

3.3.2.1 The outside diameter of Size A, B, C, and D cartridges shall be 1.688 in ± 0.031 (42.88 mm ± 0.79)

3.3.2.2 The outside diameter of Size E cartridge shall be 2.680 in ± 0.031 (68.07 mm ± 0.79)

3.3.2.3 The flange diameter of Size A, B, C, and D cartridges shall be 1.75 in ± 0.031 (44.45 mm ± 0.79)

3.3.2.4 The flange diameter of Size E cartridge shall be 2.940 in ± 0.031 (74.68 mm ± 0.79)

3.3.3 Wall Thickness:

3.3.3.1 Size A, B, C, and D cartridges shall have a wall thickness of 0.050 in ± 0.010 (1.27 mm ± 0.25)

3.3.3.2 Size E cartridge shall have a wall thickness of 0.055 in ± 0.015 (1.40 mm ± 0.38)

3.4 Materials:

3.4.1 The cartridge, plunger, and nozzle shall be made of polyethylene conforming to L-P-390.

3.5 Configuration:

3.5.1 The nozzle end of the cartridge shall have a 1/4 NPT female thread size.

3.5.2 The wide mouthed end of the cartridge shall have a protruding flange. This flange will seat onto an appropriate pneumatic dispensing gun to provide a seal to hold air pressure.

3.5.3 The manufacturer's plunger shall fit into the cartridges and its shape shall conform to the contour of the nozzle end of the same manufacturer's cartridges. See Figure 4. All cartridges and plungers must have manufacturer's name and location on each.

3.5.4 The cartridge assemblies shall consist of any of the size cartridges with a plunger fully inserted up to the nozzle end of the cartridge. See Figure 2.

3.5.5 The manufacturer's nozzle shall be threaded to fit into the manufacturer's cartridge. The nozzle shall have the manufacturer's name and location on each. See Figure 4.

4. QUALITY:

Products, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the products.

5. PACKAGING:

5.1 Products shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the products to ensure carrier acceptance and safe delivery.

5.2 For direct U.S. Military procurement, packaging shall be in accordance with MIL-STD-2073-1, Commercial Level, unless Level A is specified in the request for procurement.

6. IDENTIFICATION:

Shall be in accordance with FED-STD-123 and shall include bar code.

PREPARED BY SAE AMS Committee G-9.