

METRIC

A-A-59815

8 May 2008

## COMMERCIAL ITEM DESCRIPTION

## DUAL-BARREL, SINGLE- OR MULTI-COMPONENT PAINT STORAGE AND DISPENSING SYSTEM

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. **SCOPE.** This Commercial Item Description (CID) provides performance requirements for paint cartridge dispensing systems. It does not define equipment for dispensing paint from cartridges (e.g., manual guns, pneumatic wall dispensers, and spray equipment).

2. **CLASSIFICATION.** The cartridges shall conform to the following types and sizes:

2.1 Type.

Type A – One-piece molded design

Type B – Two-piece snap together design

2.2 Size.

Size 1 – 300 milliliter (mL) total capacity (150 mL by 150 mL)

Size 2 – 375 mL total capacity (300 mL by 75 mL)

Size 3 – 450 mL total capacity (300 mL by 150 mL)

Size 4 – 600 mL total capacity (300 mL by 300 mL)

Size 5 – 750 mL total capacity (600 mL by 150 mL)

Size 6 – 900 mL total capacity (600 mL by 300 mL)

Size 7 – 1200 mL total capacity (600 mL by 600 mL)

Size 8 – 1500 mL total capacity (750 mL by 750 mL)

3. **SALIENT CHARACTERISTICS.**

3.1 Cartridge general design. The cartridge dispensing system consists of two independent barrels or chambers filled with component A or B and sealed by an end cap that receives the plunger or piston at the back of each chamber, a removable nozzle plug or cap, a retaining nut, and a disposable static mixer. For single-component paints, each chamber shall be filled with the same component. For dual-component paints, each chamber shall be filled with different components. For dual-component paints, component A shall be in one chamber and component B shall be in the other chamber. Reusable or replaceable plugs shall securely seal the chamber tip openings during storage periods. A plunger or piston end cap seal shall be in the back of each chamber. The cartridge dispensing system shall prevent material bypass when subjected to the pressure applied to the end cap seals by the dispensing equipment used to force the two components towards the tip of the cartridge. Upon exiting the cartridge tip, the components shall be combined as they pass through a disposable static mixer to blend the material and activate two-component paints. The paint supplier shall ensure that the type and size of cartridge used corresponds to the coating material, total volume of material, and required mix ratio of two-component systems. The cartridge dispensing system shall be constructed of materials chemically resistant to paint contents.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Commander, Naval Sea Systems Command, ATTN: SEA 05M2, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to [CommandStandards@navy.mil](mailto:CommandStandards@navy.mil), with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

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3.2 Cartridge material(s). Cartridges for packaging or storage of water sensitive materials such as polyurethane and polyurea coating materials shall be made of high impact co-polymer polypropylene. The polypropylene shall be fluoro-treated for improved solvent resistance, if required by the paint manufacturer. All other cartridges shall be constructed of Nylon 6 with a maximum water absorption of 3.0 percent by weight at equilibrium.

3.2.1 Ultraviolet resistance. The cartridge shall not degrade under ultraviolet (UV) exposure for the duration of the contents' shelf life. The cartridge material shall protect the contents from UV degradation.

3.3 Chamber assemblage. The method of cartridge assembly is determined by the paint to be contained within each chamber.

3.3.1 One-piece molded design. Whenever possible, the cartridges shall be of a one-piece molded design for added strength and durability.

3.3.2 Two-piece snap together design. Two-piece snap together cartridges shall be made available, as necessary, to provide the ability to conjoin dissimilar chamber materials. This allows each chamber to have unique attributes, such as solvent or water resistance. The cartridge design shall ensure a near permanent union of the component A and component B chambers when snapped together.

3.4 Plunger or piston end cap seals. Cartridges shall be complete with plunger or piston end cap seals at the back of each chamber. The end cap seals shall be of the appropriate diameter to prevent material bypass when subjected to a system delivery pressure of 100 psi. The end cap seal shall slide smoothly, without tilting, along the inside wall of the cartridge when pushed by the applied force of the paint dispensing equipment. End cap seals shall prevent air ingress and minimize trapped air.

3.5 Nozzle design. Cartridges shall conform to the following critical nozzle design features.

3.5.1 Orifice features. The cartridges shall be manufactured with an open-end nozzle design. This feature allows the user to remove the cap or plug, dispense part of the material, and re-cap the cartridge for future use. Break-off or cut-off tip systems are not permitted. Each orifice shall be able to accurately dispense its respective paint component in the proper mixing ratio. The nozzle shall accommodate the passage of divergent viscosity materials, while maintaining paint homogeneity and backpressure, limiting content leakage, and preventing cross-contamination of chamber contents.

3.5.2 Nozzle plug or cap. All cartridges shall have a nozzle plug or cap with a design element that prevents over-tightening.

3.5.3 Retaining nut. Cartridges shall have a removable retaining nut with a molded thread design that mates with the nozzle's exterior threading. The retaining nut shall universally fit each paint cartridge size produced by the manufacturer, prevent leaks, and secure the disposable static mixer.

3.6 Cartridge dimensions. The cartridge dispensing system shall fit into the approved paint dispensing equipment designated for the given cartridge size. Each chamber of the cartridge shall be sized to directly receive the push disk of the paint dispensing equipment's plunger rod. The push disk shall contact the plunger or piston end cap seal in a planar manner to apply uniform pressure and prevent leakage. The cartridge nozzle shall protrude beyond the front end of the dispensing unit to accept the retaining nut and static mixer.

3.6.1 Wall thickness. The cartridge chamber wall thickness shall prevent cartridge damage during handling and use when tested as specified in 3.8.2 and 3.8.3. Wall thickness shall be uniform to ensure smooth movement of the plunger or piston end cap seal along the internal wall of the chamber and maintain accurate dispensing of the proper content volume.

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3.7 Static mixers. The cartridge nozzles and retaining nuts shall interface with the bell inlet of disposable static mixers. The disposable static mixer shall be easy to attach and remove and be compatible with the full range of cartridges. Both the static mixer housing and its elements shall be chemically resistant to paints and have low moisture absorption. The housing shall be made of polypropylene. The static mixer shall be of a two-stage design with 30 mixing elements (i.e., 9.53 millimeters (mm) by 24 elements with 6.35 mm by 6 elements). The wider diameter of the first inlet section shall provide initial pre-wetting and mixing of plural component paints. The narrower diameter of the second section shall provide even more intense mixing and homogenization, ensuring proper color development and coating performance. The internal tip diameter at the orifice shall be 2.16 mm.

3.7.1 Product mixing. Paint exiting the static mixer shall be homogeneous with an absence of phase separation, pigment sediment, and paint swirls. The static mixer shall combine the paint components to achieve uniform color and full compliance with the respective Military Specifications for the paint being supplied (e.g., MIL-PRF-23236).

3.8 Quality assurance. Cartridges shall be tested as follows to ensure that the product meets performance standards set forth herein.

3.8.1 Inspections. All cartridges and components shall be visually inspected for defects prior to being placed in the cartons for shipment. Lots shall be tested on a regular basis for internal diameter, wall uniformity, and thickness to ensure product meets performance standards. Cartridges shall be evaluated for fit and function with industry accepted dispensing equipment as a critical criterion for acceptance.

3.8.2 Performance. Cartridge chambers and end cap seals shall be tested for integrity with a 4-inch air gun having an inlet pressure of 100 pounds per square inch (psi).

3.8.3 Impact resistance. Cartridge impact resistance shall be determined in accordance with ASTM D5276. A filled cartridge shall be dropped a single time on the chine of the cartridge (the end opposite of the nozzle orifice) from a height of 2 meters onto a rigid steel plate. The cartridge shall not leak or have any pieces or components separate from the main body of the cartridge. A minimum of three cartridges per lot shall be tested, and all are required to pass the test for lot acceptance.

4. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

#### 5. PRODUCT CONFORMANCE PROVISIONS.

5.1 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The following market acceptability criteria are necessary to document the quality of the product to be provided under this CID:

- a. The item offered must have been sold to the government or commercial market.
- b. A commercial item is required to ensure serviceability, reliability, and quality of materials.
- c. A market tested item is required to preclude untested or experimental units.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

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7. NOTES.

7.1 Part or identification number (PIN). The following part or identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

This example describes a part numbering system for CID A-A-59815.

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Example of reference part number:

AA59815 – A1

Type: Type A – One-piece molded design

Type B – Two-piece snap together design

Size: 1 – 300 mL total capacity (150 mL by 150 mL)

2 – 375 mL total capacity (300 mL by 75 mL)

3 – 450 mL total capacity (300 mL by 150 mL)

4 – 600 mL total capacity (300 mL by 300 mL)

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6 – 900 mL total capacity (600 mL by 300 mL)

7 – 1200 mL total capacity (600 mL by 600 mL)

8 – 1500 mL total capacity (750 mL by 750 mL)

7.2 Source of documents.

7.2.1 ASTM. ASTM standards are available from ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA 19428-2959 or online at [www.astm.org](http://www.astm.org).

7.2.2 FAR. The Federal Acquisition Regulation may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 or online at <http://www.arnet.gov/far>.

7.3 Ordering data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN.
- b. Product conformance provisions including cartridge type, size, and material.
- c. Quantity required.

7.4 Key words.

Cartridge

Coating

Dual

Gun

Paint

Static mixer

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MILITARY INTERESTS

Custodian:

Army – SM

Navy – SH

Review Activities:

Navy – SA

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – FSS

Preparing Activity:

Navy – SH

(Project 81GP-2007-001)

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