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SUPERSEDING
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MILITARY SPECIFICATION

SPRAY BOTTLE, PLASTIC

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a plastic spray bottle suitable for use in dispensing spray products by the squeeze action of the bottle.

2. APPLICABLE DOCUMENTS

2.1 Issues of documents. The following documents of the issue in effect on date of invitation for bids or request for proposals, form a part of the specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

L-P-390	- Plastic Molding Material, Polyethylene,Low and Medium Density.
PPP-B-566	- Boxes, Folding, Paperboard.
PPP-B-585	- Boxes, Wood, Wirebound.
PPP-B-601	- Boxes, Wood, Cleated-Plywood.
PPP-B-621	- Boxes, Wood, Nailed and Lock Corner.
PPP-B-636	- Boxes, Fiberboard.
PPP-B-676	- Boxes, Setup.

MILITARY

MIL-L-10547	- Liners, Case, and Shirt, Overwrap, Water-Vaporproof or Waterproof, Flexible.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Headquarters, Defense Personnel Support Center, ATTN: Directorate of Medical Materiel, DPSC-ATT, 2800 South 20th Street, Philadelphia, PA 19101, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 6530

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129 - Marking for Shipment and Storage.

(Copies of specifications and standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

3. REQUIREMENTS

3.1 Material.

3.1.1 Polyethylene. Polyethylene shall be in accordance with type I, class 1, grade 2 of Federal Specification L-P-390.

3.1.2 Polystyrene. Polystyrene shall be of a good commercial grade.

3.2 Construction. The bottle shall consist of a container, a nasal spray plug with spray tubing and a screw cap closure. Bottles may be furnished assembled or unassembled.

* 3.2.1 Container. The container shall be made of pigmented polyethylene. The container shall be oval shaped. Container shall have a nominal capacity of 1-1/4 ounces and have a minimum capacity of 34.5 ml. when tested as specified in paragraph 4.3.2. The container walls shall be of such thickness as to facilitate the squeezing action. The container shall have a threaded finish to mate with the threading of a plastic screw cap closure. The threading shall be of the continuous type with at least one complete turn of the full threaded projection. The container bottom shall be so constructed that the container will be stable when placed on a smooth flat surface.

3.2.2 Nasal spray plug and tubing. The nasal spray plug and tubing shall be polyethylene, natural or pigmented. The nasal type spray plug shall have an orifice of 0.026 ± 0.003 inch diameter, centered at the tip. The innermost point of the plug shall be designed to provide means for securing the spray tubing. The spray tubing shall be 3-1/2 ± 1/8 inches long, having an inside diameter of 0.042 ± 0.004 inch, and an outside diameter of 7/64 inch, +1/32 -0 inch. The assembled container and spray assembly shall provide a spray effect (not a jet) of the contained liquid upon squeezing the sides of the container.

* 3.2.3 Closure. The closure shall be made of polystyrene and shall be shaped to adequately enclose the nasal plug tip. The closure shall be sufficiently threaded on the inside, with a continuous type thread, for a close fit with the finish of the bottle. The thread shall be formed as an integral part of the closure. The closure shall have vertical ribs or ridges on the outside to facilitate gripping. The closure shall provide a primary seal at the orifice and a secondary seal at the base edges of the nasal plug tip. There shall be no leakage when tested as specified in 4.3.1. Presence of moisture or liquid around the orifice on the inside crown of the closure shall not be considered

as leakage.

3.3 Dimensions. Bottle shall have the following dimensions (in inches):

Height (without nasal plug and closure)	3 ± 1/16
Width (large diameter)	1-3/4 ± 1/16
Overall height (with closure)	3-1/2 ± 1/16

3.4 Identification marking. Bottle shall be permanently and legibly marked with the name or registered trademark of the manufacturer.

* 3.5 Workmanship. Workmanship shall be first class throughout. Bottles shall be free from defects which detract from their appearance or impair their serviceability. All components shall be furnished in the unit package and shall be clean and dry.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification to assure that supplies and services conform to prescribed requirements.

4.1.1 Records. Records of examinations and tests performed by or for the contractor shall be maintained by the contractor and made available to the Government, upon the Government's request, at any time, or from time to time, during the performance of the contract and for a period of three years after delivery of supplies to which such records relate.

4.1.2 Inspection. Inspection, as used in this specification, is defined as as both examination (such as visual or auditory investigation without the use of special laboratory appliances or procedures) and testing (determination by technical means of physical and chemical properties).

* 4.1.3 Certificates of quality. Certificates of quality, supplied by the manufacturer of the plastic, may be furnished in lieu of actual performance of such testing by the contractor, provided lot identity has been maintained and can be demonstrated to the Government. The Certificate shall include the name of the contractor, the contract number, the name of the manufacturer or supplier, the NSN, the Item Identification, the name of the component/material, the lot number, the lot size, the sample size, the date of testing, the test method, individual test results, and the specification requirements.

* 4.2 Quality conformance inspection. The examinations and tests required to assure conformance of those items or lots of items to be offered for acceptance are classified as specified in tables I and II (see 4.2.1, 4.2.2 and 4.2.5).

* 4.2.1 Sampling for examination. Sampling for examination shall be conducted in accordance with MIL-STD-105. The inspection levels and acceptable quality levels (AQL's) shall be as indicated in table I. Unit of product for examination purposes shall be one spray bottle.

TABLE I. Sampling for examination.

	Inspection level	AQL (percent defective)
For visual examination		
Major defects	II	2.5
Minor defects	II	4.0
For dimensional examination	S-2	2.5

* 4.2.2 Examination. The spray bottles shall be examined for defects including, but not limited to, those listed in table II.

TABLE II. Classification of defects.

Categories	Defects
Major	
101	Component part missing.
102	Bottle not free of tears.
103	Bottle and closure not free of cracks and chips.
104	Bottle and closure not free of deformation.
105	Bottle not clean and dry.
106	Threads on container finish and cap not free of breaks and distortion.
107	Bottle not stable on smooth, flat surface.
108	Closure cannot be secured.
109	Spray tubing not secure in nasal plug.
110	Nasal plug does not make a snug fit in mouth of container.
111	Spray effect not obtained upon squeezing bottle (jet stream effect obtained).
Minor	
201	Identification marking missing, or illegible.
202	Bottle not smooth and free of rough mold marks.
203	Bottle and closure not free of sharp edges.

* 4.2.3 Dimensional examination. The bottle shall be examined for defects in dimensions. Any dimension not within the tolerance specified shall be classified as a defect.

* 4.2.4 Packaging inspection. The inspection of the packaging, packing, and marking for shipment and storage shall be in accordance with the quality assurance provisions of the applicable container specification and the marking requirements of MIL-STD-129.

* 4.2.5 Sampling for tests. Sampling for tests shall be conducted in accordance with MIL-STD-105, inspection level S-2 Acceptance number shall be zero.

* 4.3 Tests. Tests shall be conducted to determine compliance with specification requirements.

* 4.3.1 Leakage test.

* 4.3.1.1 Formula of test liquid. Leakage liquid used for test shall be formulated in percent by weight as follows:

1. 10.0 percent Aerosol O.T. (based on 100 percent concentration of aerosol).
2. 0.1 percent Gentian Violet powder.
3. 89.9 percent of water.

* 4.3.1.2 Test. Sample bottle shall be filled with 15 ml. of test liquid and assembled with nasal spray tip, spray tubing and closure, firmly applied. Bottle shall be inverted and placed in an oven at a temperature of 120° ± 3° Fahrenheit (F.°) for 24 hours. At end of this period, examine exterior of bottle around the closure and finish of bottle for leakage (blue-purple color).

* 4.3.2 Volume test. Bottle shall be filled to the base of neck with water at room temperature. Volume of water shall be measured in a graduate.

* 5. PACKAGING.

5.1 Packaging. Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Unit packaging. Each bottle with components shall be packaged in a container of appropriate size. Closure shall be adequate to prevent accidental opening.

5.1.1.2 Intermediate package. Twenty-four (24) bottles shall be packaged in a box of appropriate size constructed in accordance with PPP-B-566, PPP-B-676 or PPP-B-636, type CF, class domestic. Closure of box shall be as specified in the appendix of the applicable box specification.

5.1.2 Level C. Bottles shall be clean and individually packaged in a manner that will afford adequate protection against corrosion, deterioration, and physical damage during shipment from supply source to the first receiving activity.

5.2 Packing. Packing shall be level A, B or C, as specified (see 6.1).

* 5.2.1 Level A. Four hundred and thirty-two (432) bottles shall be packed in an exterior container designed for a type 2 load and constructed in accordance with PPP-B-585, class 3, style 3; PPP-B-601, overseas type; PPP-B-621, class 2 or PPP-B-636, class weather resistant, grade V3c. Closure and strapping shall be as specified in the appendix of the applicable box specification.

* 5.2.1.1 Case liner. Each level A wood box shall be lined with a waterproof case liner conforming to MIL-L-10547. Closure and sealing shall conform to applicable paragraphs of appendix thereto. Case liner shall not be required for fiberboard boxes. Fiberboard box shall be waterproof as specified in the appendix of PPP-B-636.

* 5.2.2 Level B. Four hundred and thirty-two (432) bottle shall be packed in an exterior container designed for a type 2 load and constructed in accordance with PPP-B-585, class 1, style 3; PPP-B-601, domestic type; PPP-B-621, class 1; or PPP-B-636, class domestic. Closure of box shall be as specified in the appendix of the applicable box specification.

* 5.2.3 Level C. The packaged bottles shall be packed in shipping containers in a manner that will afford adequate protection against damage during direct shipment from the supply source to the first receiving activity. These packs shall conform to the applicable carriers rules and regulations.

* 5.3 Marking. Each unit, intermediate package, and exterior container shall be marked as specified in MIL-STD-129.

6. NOTES

6.1 Intended use. The spray bottle covered by this specification is intended for use in dispersing spray products.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number and date of this specification.
(b) National Stock Number (NSN).
(c) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).

6.3 This specification covers the following item appearing in the Federal Supply Catalog:

National Stock Number	Item Identification
6530-00-782-6467	BOTTLE, SPRAY, Plastic, 1-1/4 oz.

6.4 This specification does not cover all types, classes, grades or sizes of the commodity indicated by the title of this specification, or those which are commercially available, but is intended to cover the type which is normally procured to meet military requirements.

6.5 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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Project No. 6530-1474

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MIL-S-36468A SPRAY BOTTLE, Plastic

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