

METRIC

DOD-E-24607A(SH)
w/INT. AMENDMENT 1
11 September 2006

USED IN LIEU OF
DOD-E-24607A
31 July 1987

MILITARY SPECIFICATION

ENAMEL, INTERIOR, NONFLAMING (DRY), CHLORINATED ALKYD
RESIN, SEMIGLOSS (METRIC)

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

1. SCOPE

1.1 Scope. This specification covers enamel, interior, nonflaming (dry), chlorinated alkyd resin, semigloss formulated to a maximum volatile organic compound (VOC) content of 340 grams per liter (g/L) (2.83 pounds per gallon).

1.2 Classification. Enamel shall be of the following colors, as specified (see 6.2.1):

- (a) Beach-sand, semigloss, formula no. MSTs-3
- (b) Rose-wood, semigloss, formula no. MSTs-8
- (c) Clipper blue, semigloss, formula no. MSTs-9
- (d) Sun glow, semigloss, formula no. MSTs-15
- (e) Soft white, semigloss, formula no. 124 (see 6.6)
- (f) Pastel green, semigloss, formula no. 125
- (g) Bulkhead gray, semigloss, formula no. 126
- (h) Green gray, semigloss, formula no. 127
- (i) Yellow gray, semigloss, formula no. 128
- (j) Pearl gray, semigloss, formula no. 130
- (k) Pastel blue, semigloss, formula no. 131

Comments, suggestions, or questions on this document should be addressed to Commander, Naval Sea Systems Command, ATTN: SEA 05Q, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to 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>.

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

SPECIFICATIONS

FEDERAL

TT-P-645	- Primer, Paint, Zinc-Chromate, Alkyd Type.
TT-T-291	- Thinner, Paint, Mineral-Spirits, Regular and Odorless.
DELETED	

MILITARY

DELETED	
DOD-R-21417	- Resin, Chlorinated Alkyd, Solution (Metric).

STANDARDS

FEDERAL

FED-STD-141	- Paint, Varnish, Lacquer; and Related Materials; Methods for Inspection, Sampling and Testing.
FED-STD-313	- Material Safety Data Sheets, Preparation and Submission of.
FED-STD-595	- Colors.

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 209	- Standard Specification for Lampblack Pigment.
D 261	- Standard Specification for Iron Blue Pigment.
D 332	- Standard Test Methods for Tinting Strength of White Pigments. (DoD adopted)
D 523	- Standard Test Methods for Specular Gloss.(DoD adopted)
B 562	- Standard Test Method for Consistency of Paints Using the Stormer Viscometer. (DoD adopted)
D 656	- Standard Specification for Pure Toluidine Red Toner.
D 1210	- Standard Test Method for Fineness of Dispersion of Pigment-Vehicle Systems. (DoD adopted)

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

- D 1296 - Standard Test Method for Odor of Volatile Solvents and Diluents. (DoD adopted)
- D 1394 - Standard Method for Chemical Analysis of White Titanium Pigments. (DoD adopted)
- D 1475 - Standard Test Method for Density of Paint, Varnish, Lacquer, and Related Products. (DoD adopted)
- D 2729 - Standard Practice for Visual Evaluation of Color Differences of Opaque Materials. (DoD adopted)
- D 2244 - Standard Method for Calculation of Color Differences from Instrumentally Pleasured Color Coordinates. (DoD adopted)
- D 2369 - Standard Test Method for Volatile Content of Coatings. (DoD adopted)
- D 3278 - Standard Test Methods for Flash Point of Liquids by Setaflash Closed-Cup Apparatus. (DoD adopted)
- D 3335 - Standard Test Method for Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy.
- D 3359 - Standard Methods for Measuring Adhesion by Tape Test. (DoD adopted)
- E 162 - Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source. (DoD adopted)

(Copies of these documents are available from ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA 19428-2959 or online at www.astm.org.)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Rules and Regulations - Rule 102

(Application for copies should be addressed to the South Coast Air Quality Management District, 9150 E. Flair Drive, El Monte, CA 91731.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.4 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Composition. Enamel shall consist of ingredients in the proportions specified in table I. Additional tinting pigments may be added as necessary to conform to color requirements.

TABLE I. Formulations.¹

Color	Orange ₅	Zinc Phosphate	Barium Metaborate	Titanium dioxide ^{2/5}	Yellow ₅	Red ₅	Black ₅	Blue ₅	Chlorinated alkyd	Paint thinner	Drying agent ⁴	Anti-settling agent ³	Anti-skinning agent ³
Beach sand	---	232	192	294	26.5	1.6	---	0.3	459	120	41.4	2.1	2.6
Rose wood	---	219	192	294	30.5	5.0	1.0	---	463	117	41.4	2.1	2.6
Clipper blue	---	243	207	253	12.4	0.5	---	4.4	461	123	41.4	2.1	2.6
Sun glow	---	235	192	268	25.3	1.2	---	---	450	125	41.4	2.1	2.6
Soft white	0.3	226	202	278	1.3	---	---	---	470	123	41.4	2.1	2.6
Pastel green ^a	---	241	220	238	8.3	---	---	---	482	105	41.4	2.1	2.6
Bulkhead gray	---	268	227	199	9.6	1.4	9.3	---	459	125	41.4	2.1	2.6
Green gray	2.7	246	205	264	3.8	---	9.0	---	458	121	41.4	2.1	2.6
Yellow gray	3.4	235	200	268	6.1	---	5.2	---	456	125	41.4	2.1	2.6
Pearl gray	---	227	202	269	4.4	0.9	7.6	---	470	119	41.4	2.1	2.6
Pastel blue	---	246	200	273	2.5	---	4.3	2.4	459	125	41.4	2.1	2.6

^a Green pigment required is 1.6 pounds.

¹ Use of mass units in pounds results in a volume slightly in excess of 100 gallons. Mass units in kilograms (kg) results in a volume of approximately 832 liters (L).

² The titanium dioxide pigment shall contain by weight not less than 94 percent titanium dioxide and between 0.5 and 2.5 percent aluminum oxide. It shall be a semichalking rutile type in accordance with ASTM D 332.

³ The amounts of antiskinning agent and antisetling agent may be adjusted to meet the requirements of the finished enamel. The agents shall be effective for their purpose in small amounts in the order indicated.

⁴ The amount and type of drying agent shall be left to the discretion of the contractor. The drying agent shall produce paint which conforms to the drying time requirements and shall not contain lead.

⁵ These pigments shall not contain carcinogenic or probable carcinogenic materials.

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

3.2 Toxicity. The material shall have no adverse effect on the health of personnel when used for its intended purpose. Questions pertinent to this effect shall be referred by the contracting activity to the appropriate departmental medical service who will act as an advisor to the contracting activity (see 4.6).

3.3 Quantitative requirements. The enamel shall conform to the quantitative characteristics specified (see tables II and III). Lead in any form shall not be present in the dry film in quantities greater than 0.005 percent (50 parts per million (p/m)).

TABLE II. Quantitative characteristics applicable to all colors.

Characteristic	Minimum	Maximum
Pigment, percent by mass of enamel	52.2	54.2
Volatiles, percent by mass of enamel	---	21.8
Total solids, percent by mass of enamel	78.2	---
Chlorinated dibasic acid, percent by mass of nonvolatile vehicle	45.0	----
Chlorine, percent by mass of chlorinated dibasic acid	51.0	----
Coarse particles, percent by mass of Enamel	----	0.1
Consistency, Krebs-Stormer: Krebs units	80	90
Density, kg/L (lb/gal)	1.61 (143.4)	1.66 (13.9)
Fineness of grind	5	----
Drying time, hours:		
Set to touch	----	3
Dry hard	----	6
Specular gloss, degrees	45	60
Flash point, °C (°F)	37.7 (100)	----
VOC in g/L (pounds per gallon)	---	340 (2.83)

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

TABLE III. Quantitative characteristics, applicable to specific colors. DELETED

3.4 Volatile portion. The volatile organic content of the enamel shall be a maximum of 340 grams per liter (g/L) (2.83 pounds per gallon) when tested in accordance with paragraph 4.4.5.

3.5 Qualitative characteristics. The enamel shall conform to the following qualitative characteristics.

3.5.1 Odor. The odor shall be characteristic of the volatiles permitted (see 4.4).

3.5.2 Condition in container. A freshly opened, full container of enamel, shall be free from lumps, abnormal thickening, or livering. It shall show no more pigment settling or caking than can be readily reincorporated to a smooth, uniform state (see 4.4.7).

3.5.3 Storage stability. The enamel shall conform to 3.5.3.1 and 3.5.3.2.

3.5.3.1 Partially full container. A three-quarter filled, closed 225 milliliter (mL) 8-ounce glass jar of enamel shall show no skinning at the end of 48 hours, and after aging as specified, the enamel shall show no livering, curdling, hard caking, or gummy sediment. It shall mix readily to a smooth, uniform state and skins formed shall be continuous and easily removed (see 4.4.8.1).

3.5.3.2 Useability. Enamel in original, unopened containers shall be usable for a period of 1 year of normal warehouse storage after date of manufacture. The enamel shall redisperse into a uniform condition; free from livering, curdling, gelling, or other objectionable properties; not to exceed 100 Krebs units in consistency; not to exceed 8 hours dry hard time; match the standard color card; and have a gloss not greater than 60 and not less than 35 (see 4.4.8.2).

3.5.4 Adhesion. The enamel shall show good adhesion (see 4.4.9).

3.5.5 Appearance. Panels prepared as specified (see 4.4.10) shall show no evidence of wrinkling or any other film defects and shall have a smooth and uniform appearance.

3.5.6 Color. The color shall match the applicable color of FED-STD-595 as listed in table I (see 4.4.10).

3.5.7 Compatibility. There shall be no evidence of incompatibility of any of the ingredients of the enamel (see 4.4.11).

3.5.8 Antisagging properties. There shall be no sagging (see 4.4.12).

3.5.9 Nonflaming property. The enamel shall be resistant to burning and shall show no flaming or dripping and have an average flame spread index of 8 with no individual specimen having a flame spread index over 10 (see 4.4.13).

3.6 Material safety data sheet. The contracting activity shall be provided a material safety data sheet (PISDS) at the time of contract award. The MSDS is form OSHA-20 and found as part of FED-STD-313. The MSDS shall be included with each shipment of the material covered by this specification (see 6.6).

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

3.7 Batch specific VOC certification. Manufacturer shall prepare label instruction in accordance with 29 CFR 1910. Each container shall be affixed with a hazardous chemical warning label in accordance with 29 CFR 1910.1200. To comply with the Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements for shipbuilding and ship repair, the following two statements shall appear on each paint can label:

- a. Certification that the paint in the container meets the NESHAP requirements for shipbuilding and ship repair.
- b. Statement of the ratio of volatile content to solids expressed as grams of volatile organic hazardous air pollutants (VOHAPS) per liter of solids.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Quality assurance. Quality assurance shall be provided in accordance with method 1031 of FED-STD-141, and as hereinafter supplemented. The useability requirement (see 3.5.3.2) shall apply for 1 year after manufacture regardless of other testing or prior acceptance of material.

4.3 Quality conformance inspection. Quality conformance inspection shall be as specified in 4.3.1 and 4.3.2.

4.3.1 Lot. A lot shall consist of all paint of the same formula number from a single, uniform batch, or uniform blend of batches offered for delivery at one time.

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

4.3.2 Sampling. A sample of 0.5 L (1 pint) of the chlorinated alkyd resin and, when requested by the contracting activity, 0.5 L (1 pint) of petroleum spirits and 0.25 L (1/2 pint) of the remaining ingredients in the formula listed in table I shall be taken for test purposes.

4.4 Test procedures. The finished enamel shall be tested in accordance with the methods specified in table IV, and as specified herein. Failure of any sample to pass any test and nonconformance to the requirements of this specification shall be cause for rejection of the lot represented by the sample.

TABLE III. Test procedures.

Item	Test method		Test paragraph	Requirement paragraph
	FED-STD-141	ASTM		
Pigment content	4021	----	----	Table II
Volatiles	----	D 2369	----	Table II
Total solids	4053	----	----	Table II
Chlorinated dibasic acid	----	----	4.4.1	Table II
Chlorine content	----	----	4.4.2	Table II
Coarse particles and skins	4092	----	----	Table II
Consistency, Krebs-Stormer	----	D 562	----	Table II
Weight per gallon	----	D 1475	----	Table II
Fineness of grind	----	D 1210	----	Table II
Drying time	4061	----	4.4.3	Table II
Specular gloss, 60 degrees	----	D 523	4.4.4	Table II
Flash point	----	D 3278	----	Table II
VOC	----		4.4.5	Table II
DELETED				
Lead	----	----	4.4.6	3.3
Odor	----	D 1296	4.4	3.5.1
Condition in container	3011	----	4.4.7	3.5.2
Stability partially full container	3021	----	4.4.8.1	3.5.3.1
Useability	----	----	4.4.8.2	3.5.3.2
Adhesion	----	----	4.4.9	3.5.4
Appearance	----	----	4.4.9	3.5.5
Color	----	D 1729 or D 2244	4.4.10	3.5.6
Compatibility	4203	----	4.4.11	3.5.7
Antisagging properties	----	----	4.4.12	3.5.8
Nonflaming property	----	E 162	4.4.13	3.5.9

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

4.4.1 Chlorinated dibasic acid. The chlorinated dibasic acid shall be determined on the extracted vehicle from the pigment determination. The extracted vehicle shall be evaporated until the nonvolatile is approximately 10 percent. The extracted vehicle shall be cooled, transferred to a stoppered flask, and the percent of nonvolatile determined. A sample containing about 1 gram of nonvolatile shall be weighed into a 500 mL of Erlenmeyer flask or equal with a ground-glass joint. One-hundred mL of benzene shall be dissolved in the sample of nonvolatile and 50 mL of 1N potassium hydroxide in isopropyl alcohol shall be added. Mixture shall be refluxed while stirring for 2 hours. The flask shall be stoppered, cooled, and allowed to stand overnight. Mixture shall then be filtered through a Gooch crucible, or equal, having a glass filter pad on the bottom, covered with diatomaceous earth. The flask and precipitate shall be washed with a solution of one volume of isopropyl alcohol to two volumes of benzene. After final washing with 25 mL of ethyl ether, air shall be drawn through the crucible for 1 minute. The filtrate shall then be discarded. The precipitate shall be washed from the flask through the crucible with about 100 mL of water. The washings shall be transferred to a separatory funnel and acidified with 1:4 sulfuric acid. The chlorinated dibasic acid shall be extracted with consecutive volumes of 75 mL, 50 mL, and 50 mL of ethyl ether. The ether extracts shall be collected and washed with water until the washings are acid-free. The ether shall then be transferred to a 250-mL beaker. Five mL of m-cresol purple indicator (0.025 gram in 100 mL of absolute ethyl alcohol) shall be added. Mixture shall be titrated to a purple end point with 0.2N potassium hydroxide in methyl alcohol.

$$\text{Percent chlorinated dibasic acid} = \frac{\text{mL of alkali} \times \text{normality} \times 19.45}{\text{gram of nonvolatile vehicle}}$$

4.4.2 Chlorine. Chlorine shall be determined using the Schoniger Low Pressure Combustion Apparatus or equal. Approximately 30 milligrams (mg) of nonvolatile vehicle shall be weighed from the nonvolatile determination of the evaporated, extracted vehicle, on a Schoniger or equal paper sample holder. The paper shall be folded over the sample and placed in the platinum sample holder on the flask head. Fifteen mL of N/10 sodium hydroxide shall be added to the flask. The flask shall be placed in the safety ignition unit and the sample shall be fired. The flask shall be allowed to cool, removed from the unit, and allowed to stand until the mist in the flask condenses. The flask shall be shaken vigorously to absorb vapors and then the solution shall be transferred to a 150 mL beaker. Five drops of chlorine indicator shall be added.

(Chlorine indicator: 5.0 grams of chemically pure diphenyl carbazone and 1.0 gram of bromphenol blue indicator shall be dissolved in 1 L of 95 percent ethanol or propanol.) 0.2N nitrate acid shall be added until the color changes from purple to yellow. Then 4 drops excess shall be added. Mixture shall be titrated with a 0.025 N mercuric nitrate solution until the color of the solution changes from yellow to lavender.

Percent chlorine in chlorinated dibasic acid =

$$\frac{\text{mL titration} \times \text{normality of mercuric nitrate} \times 355.0}{\text{gram sample} \times \text{percent chlorinated dibasic acid in nonvolatile vehicle}}$$

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

4.4.3 Drying time. Drying time shall be determined in accordance with method 4061 of FED-STD-141, except that the specified conditions of temperature and humidity shall apply only for referee tests in case of dispute. Other tests shall be conducted under prevailing laboratory conditions.

4.4.4 Gloss. Gloss shall be determined in accordance with ASTM D 523. Forty-eight hours air-drying time in a room free from dust and fumes under prevailing laboratory conditions of temperature and humidity shall be allowed before making the reading.

4.4.5 Titanium dioxide. DELETED

4.4.6 Volatile organic compounds(VOC) content. The VOC content shall be determined in accordance with 40 CFR 60, Appendix A, Method 24. The VOC content shall be as specified in Table II and 3.4.

4.4.7 Lead content on nonvolatile. Lead content of nonvolatile shall be determined in accordance with ASTM D 3335.

4.4.8 Condition in container. Package condition shall be determined in accordance with method 3011 of FED-STD-141. Package condition shall meet the requirements specified in 3.5.2.

4.4.9 Storage stability. Storage stability shall be determined in accordance with 4.4.9.1 through 4.4.9.2.

4.4.9.1 Partially full container. Skinning shall be determined after 48 hours in accordance with method 3021 of FED-STD-141. Container shall be resealed and aged for 7 days at 22 to 27 degrees Celsius (°C) (72 to 80 degrees Fahrenheit (°F)). Container shall be examined for conformance to 3.5.3.1.

4.4.9.2 Useability. The Government, at its option and at any time not to exceed 1 year after manufacture, may test enamel stored in its original containers for condition in container, viscosity, color, gloss, and dry hard time.

4.4.10 Adhesion and appearance. One mild steel panel shall be coated with primer conforming to TT-P-645 to a dry film thickness of 0.002 to 0.0025 centimeters (cm) (0.8 to 1.0 mil). After 24 hours drying, the panel shall be coated with the enamel being tested to a dry film thickness of 0.004 to 0.005 cm (1.5 to 2.0 mils). Vertical strokes shall be used until the surface has been covered; horizontal strokes shall be used to lay off. The panels shall be placed in a nearly vertical position to dry. After air drying for 48 hours, film shall be inspected for evidence of wrinkling, excessive brush marks, or other film defects. The film shall be subjected to the knife test in accordance with ASTM D 3359 to determine whether the paint exhibits good adhesion to each of the primers.

4.4.11 Color. Panel shall be prepared in accordance with 4.4.10. After a 48-hour drying period, panel shall be compared with the color specified (see table I) using the procedure specified in ASTM D 1729. If doubt exists after visual comparison as to the acceptability of the match, the color difference shall be determined using the instrument specified in ASTM D 2244. An acceptable color match shall be within 2 units.

4.4.12 Compatibility. Compatibility with thinner shall be determined in accordance with method 4203 of FED-STD-141. Fifty mL of enamel and 50 mL of petroleum spirits, conforming to type II, grade A of TT-T-291, shall be used. Observation for compatibility shall be made immediately after mixing and also 30 minutes after mixing.

4.4.13 Antisagging properties. A panel shall be coated to a wet film thickness of 0.004 to 0.005 cm (1.5 to 2.0 mils). A 0.010 cm (4 mils) clearance drawdown blade may be used. The panel shall be placed in a vertical position, and a blunt instrument shall immediately be drawn across the panel to obtain a line about

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

0.48 cm (3/16 inch) wide where the paint has been removed. The panel shall be dried in a vertical position. Panel shall be examined. The line shall remain essentially unchanged in width (a sag of not more than 0.04 cm (1/64 inch) shall be permitted), and there shall be no other evidence of sagging or running.

4.4.14 Nonflaming property. Three ordinary strength steel panels shall be prepared in accordance with 4.4.10 except that the drying time of the enamel shall be 14 days. The test specimen shall show no flaming or dripping and have an average flame spread index of 8 with no individual specimen having a flame spread index over 10 when tested in triplicate. The ordinary strength steel panels shall be tested in accordance with ASTM E 162 (see 3.5.9).

4.5 Certification data/report. When specified in the contract or order, a certification data/report shall be prepared (see 6.2.2).

4.6 Toxicological formulations. The contractor shall have the toxicological formulations and associated information available for review by the contracting activity to evaluate the safety of the material for the proposed use.

4.7 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and 6.2.1.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

5.2 Marking. DELETED

5.2.1 Special marking. DELETED

5.2.1.1 Lead warning. DELETED

5.2.1.2 Volatile content. DELETED

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

6. NOTES

6.1 Intended use. Enamels covered by this specification are intended for application over previously primed or painted surfaces of ships' interior metal bulkheads. The enamels are formulated to provide a decorative coating or dry film and are not intended to prevent the burning of wood or other combustible substrates, but will retard combustion to a limited extent.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Color of enamel (see 1.2).
- (c) Selection of level of packaging and level of packing required (see Table IV).
- (d) Size of container required (see Table IV).
- (e) Special marking required (see Table V).

6.2.2 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD FAR Supplement, Part 27, Sub-Part 27.410-6 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraph.

<u>Paragraph no.</u>	<u>Data requirement title</u>	<u>Applicable DID no.</u>	<u>Option</u>
4.5	Certification data/report	UDI-A-232b4	----

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DoD 5010.12-L, APSSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.2.2.1 The data requirements of 6.2.2 and any task in sections 3, 4, or 5 of this specification required to be performed to meet a data requirement may be waived by the contracting/acquisition activity upon certification by the offeror that identical data were submitted by the offeror and accepted by the Government under a previous contract for identical item acquired to this specification. This does not apply to specific data which may be required for each contract regardless of whether an identical item has been supplied previously (for example, test reports).

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

6.3 Volatile content. DELETED

6.4 Paint volume. The paints covered by this specification should be purchased by volume, the unit normally being 4 L or 1 U.S. liquid gallon at 20 °C (68 °F).

6.5 Composition by volume. DELETED

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

TABLE V. Composition by volume. DELETED

6.6 Tinting colors. DELETED

6.7 Cross reference. Nonflaming enamel (dry), chlorinated alkyd resin, semigloss, covered in this specification corresponds to those covered in the superseded specifications, as follows:

<u>DOD-E-24607</u>	<u>Superseded specifications</u>
Beach-sand	MIL-E-17136B(SHIPS)
Rosewood	MIL-E-17325A(SHIPS)
Clipper blue	MIL-E-17326A(SHIPS)
Sun glow	MIL-E-17466A(SHIPS)
Soft white	MIL-E-17970C
Pastel green	MIL-E-17971C
Bulkhead gray	MIL-E-17972C
Green gray	MIL-P-17973A(SHIPS)
Yellow gray	MIL-P-17974A(SHIPS)
Pearl gray	Not covered
Pastel blue	Not covered

6.8 Material safety data sheets. Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets (MSDS) prepared in accordance with FED-STD-313. The pertinent Government mailing addresses for submission of data are listed in appendix B of FED-STD-313. In order to obtain the MSDS, FAR clause 52.223-3 must be in the contract.

6.8a Suggested packaging. Suggested packaging requirements are contained in Tables IV and V.

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

TABLE IV. Suggested packing and packaging.

Packaging	Recommended requirements for direct Government acquisitions
Unit of procurement	The paints covered by this specification should be purchased by volume. The unit of procurement should be in multiples of 1 U.S. liquid gallon or 1 L at 60EF (15.5EC).
Containers	<p>(a) The paint should be furnished in cans of appropriate volume such as 3.78L (1-gallon) or multiples thereof.</p> <p>(b) Multiple f Friction plug containers should be in accordance with PPP-C-96, Type V, Class 2. Interior coatings should be as specified therein. Exterior coatings, including side seam stripping, should be as specified therein for plan B. Wire handles as specified therein, should be provided for the 1-gallon container. Closure of the properly filled and sealed cans should be as specified in the appendix thereto.</p> <p>(c) Pails should be to PPP-P-704.</p> <p>(d) All containers should comply with the requirements of the Uniform Freight Classifications (UFC), the National Motor Freight Classification (NMFC), and the applicable requirements of the Code of Federal Regulations 49CFR, Department of Transportation (DOT).</p>
Intermediate containers	<p>(a) Paints should be packaged in intermediate containers.</p> <p>(b) Intermediate containers should be close-fitting corrugated fiberboard boxes in accordance with UFC, NMFC and 49CFR requirements. Fiberboard used in the construction of interior (unit and intermediate) and exterior containers, including interior packaging forms, should conform to the best commercial practice. Such classes should be domestic fire-retardant or weather resistant fire-retardant as specified.</p>
Commercial packaging	<p>(a) Commercial packaging should be to ASTM D3951.</p> <p>(b) All containers should comply with the requirements of the Uniform Freight Classifications (UFC), the National Motor Freight Classification (NMFC), and the applicable requirements of the Code of Federal Regulations 49CFR, Department of Transportation (DOT).</p>
Packing	<p>Packing should be specified as follows:</p> <p>(a) Overseas delivery (Level A) packing. Intermediate containers of paint should be packed in close-fitting wood boxes conforming to the best commercial practice. Box closure and strapping should be as specified in the applicable box specification or the appendix thereto except that strapping should be flat and the finish B.</p> <p>(b) Domestic delivery (Level B) packing. Level B packing should be as for level A, except that boxes should be domestic type or class and the strapping should be finish A or B.</p> <p>(c) Commercial packing. The paint, in the specified unit and intermediate containers should, as applicable, be packed in multiples of like sizes in accordance with UFC, NMFC, and 49CFR requirements.</p>
Palletization	Intermediate containers should be palletized in accordance with the best commercial practice. Only one size unit or intermediate container should be placed on a pallet.
Packing for Navy acquisitions	<p>Treated lumber and plywood. All lumber and plywood, including laminated veneer materials, used in shipping container and pallet construction, member, blocking, bracing, and reinforcing should be fire-retardant treated material in accordance with MIL-L-19140 as follows:</p> <p>(a) General use, weather resistant: MIL-L-19140, Type II, Category I.</p> <p>(b) General use, non-weather resistant: MIL-L-19140, Type I, Category I.</p>
Material safety data sheets (MSDS) and ASTM F718	A copy of the MSDS and ASTM F718 should be attached to the shipping document for each destination (see 6.6).
VOC certification sheets	VOC certification sheets will be provided by the manufacturer for each batch of paint when requested by the procuring activity.

DOD-E-24607A(SH)
w/INT. AMENDMENT 1

TABLE V. Suggested marking.

Marking type	Recommended marking
Bar codes	Marking should include bar codes
Hazardous warnings	(a) Labels should be in accordance with 29 CFR Parts 1910, 1915, 1917, 1918, 1926 and 1928. (b) All individual containers should have the following marking: “CAUTION: This paint contains volatile solvents, with probable hazardous vapors. Use with adequate ventilation. Avoid prolonged breathing of vapors or spray mists. The solvents are highly flammable, avoid open flame and smoking.” (c) Each paint container, shipping container, and palletized load should be marked with the appropriate hazardous symbol in accordance with FED-STD-313.
Volatile organic content (VOC)	“Contains a maximum of 250 grams of solvent of volatile organic content (VOC) per liter of paint per 40 CFR 60, CH. 1, Appendix A (EPA) Method 24.”
OSHA Hazard Communication Act and FED-STD-313	Markings should include all information necessary to comply with OSHA Hazard Communication Act and FED-STD-313.
Mixing and use instructions	Directions should include mixing, application equipment directions, limitations on thinning, temperature range for use and surface preparation recommendations. Directions should refer user to data sheets, MSDS and ASTM F718 for information.

6.9 Subject term (key word) listing.

Antisettling agent
Antiskinning agent
Chlorinated alkyd resin
Color
Enamel
Interior
Nonflaming
Paint thinner
Semigloss
DELETED
Titanium dioxide

6.10 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

Custodian:
Navy – SH

Preparing activity:
Navy – SH
(Project 8010-2006-031)

Review activities:
Navy – CG, MC, OS, YD

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.