

METRIC

A-A-3165A

November 16, 2007

Superseding

A-A-3165

April 30, 1969

## COMMERCIAL ITEM DESCRIPTION

### LACQUER, GLOSS, FOR AIRCRAFT USE

The General Services Administration has authorized the use of this commercial item description as a replacement for Federal Specification TT-L-32 for all federal agencies.

1. **SCOPE.** This description covers a durable, pigmented, high gloss lacquer for spray or hand application on primed or prepared surfaces.
2. **CLASSIFICATION.** Reserved.
3. **SALIENT CHARACTERISTICS**
  - 3.1. **Pigment.** Fed-Std-595 color # 17825 shall contain no tinting pigment.
  - 3.2. **Vehicle/ Resin.** Shall be phthalic anhydride modified non-drying oils. Phenolic resins and rosins are not permitted. The finished formulation shall have a minimum shelf life of 24 months with periodic warehouse temperatures up to 43° C (110° F).
  - 3.3. **Specular Gloss.** Shall be in accordance with Table 2.
  - 3.4. **Contrast Ratio.** Shall be in accordance with Table 2.
  - 3.5. **Condition in Container.** The packaged material shall pour freely without stirring. The lacquer, in a freshly opened full container, shall show no grit, skimming, curdling, livering, or excessive pigment flotation, and shall show no more settling or caking than may be easily redispersed with a paddle to a uniform and homogeneous condition.
  - 3.6. **Odor.** The odor of the lacquer, wet or dry, shall not be obnoxious. An air-dried film shall retain no residual odor 48 hours after application.
  - 3.7. **Self Lifting.** Apply a 2<sup>nd</sup> coat of lacquer to the 1<sup>st</sup> “dry-hard” coat of the same lacquer, and observe for any signs of “lifting” of the first coat such as “wrinkling”, bubbling or other disturbance of the smooth lacquer film. There shall be no wrinkles after 30 minutes. Evidence of self-lifting shall be reason for rejection of all lacquer batches or lots manufactured in accordance with the same formulation and raw materials.

**Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Heartland Global Supply, GSA/FAS/QSDAAB, 1500 E. Bannister Rd., Kansas City, MO 64131**

**3.8. Water Resistance.** Using a drawn-down bar, apply a 1.0 +/- 0.2 mil dry film of lacquer to three (3) flat plate aluminum surfaces which are mechanically abraded (200 grit+) and degreased with a clean cloth, damp with clean, new lacquer thinner. No primer is under the lacquer which may interfere with results. Cure the film at 23° C (73° F) and a maximum of 60% relative humidity for 72 hours. Totally submerge the three cured draw down specimens, horizontally under 2.54 cm (1.0 inch) of 23°C tapwater for 24 hours, remove and sponge dry. Repeat this procedure for four (4) cycles with no more than 15 minutes before re-immersion. The lacquer fails if any specimen shows even slight signs of “whitening-clouding”, softening, lifting, blistering, change in color, loss of adhesion or hardness.

**3.9. Removal of Dried Lacquer.** Using a soft cotton wipe, previously wetted with lacquer thinner, a 1.0 mil thickness of dry-hard lacquer shall be dissolved using light to moderate hard pressure. Pre-wetting or softening of the dried lacquer surface is permitted. Two such removal actions using a clean final wipe cloth, dampened with lacquer thinner, shall result in complete lacquer removal to the bare substrate or an insoluble primed surface.

**3.10. Color.** Color shall be as specified in the contract or purchase order in accordance with Fed-Std-595; CIE Lab, Delta E is 1.0 maximum. Authorized colors are listed below

**TABLE 1, COLOR<sup>1</sup>**

Color	Fed Std 595B Color Chip #	Contrast Ratio	Color	Fed Std 595B Color Chip #	Contrast Ratio
Light Yellow	13655	0.86	Insignia White	17825 <sup>2</sup>	0.90
Light Green	14187	0.98	Insignia Blue	15044	0.98
Aircraft Gray	16473	0.98	Insignia Red	11136	0.88
Engine Gray	16081	0.98	Dark Olive Drab	14084	0.98
Strata Blue	15045	0.98	Black	17038	0.98
Intl Orange	12197	0.96	Light Blue	15102	0.98
Brown	10080	0.98	Orange-Yellow	13538	0.88

**NOTES:**

1. For Clear, use Gardner Tube No. 3 or less
2. Brighter or whiter shades acceptable

**3.11. Fade Resistant Pigments.** In case of dispute or color fading complaints from Government users, commercial lacquer products shall have equal or better fade resistance to the ASTM “Lightfastness II – Very good lightfastness” color group pigments listed in ASTM D4302, then tested in accordance with ASTM D2244 or D822. Test shall be run using unfiltered light, no water exposure and a duration sufficient to detect fading of the standard color lacquer/ paint which shall contain pigments listed within ASTM D4302.

**3.12. Adhesion.** 3B rating or better using ASTM Test Method D3359.

**TABLE 2**  
**QUANTITATIVE REQUIREMENTS**

Property	Limit or Note	Test Method
Minimum nonvolatile (liquid weight basis)	40%	ASTM D1644
Colors 17038, 14084, 15044, 15042, 15045, 11136	32%	
Clear	30%	
Maximum Pigment (nonvolatile weight basis)	45%	ASTM D2698 or 2371
Minimum Vehicle/ resin (nonvolatile weight basis)	55%	ASTM D2372
Maximum Volatile Organic Content	420 g/l	EPA Test Method 24, ASTM D2369
Drying Time @ 40-60 microns wet film  "Dry To Touch" "Dry Hard"	10 min. maximum 40 min. maximum	ASTM D1640
Specular Gloss @ 60° angle Colors 17875, 16473, 15042, 17038	80% minimum 75% minimum	ASTM D523
Adhesion	3B rating or better	ASTM D3359
Contrast Ratio	0.98	ASTM D2805
Dilutable-commercial lacquer thinner	No phasing/coagulation	Visual
Self lifting by 2 <sup>nd</sup> coat (1.0 mil ea)	No wrinkles after 4 hrs.	Visual
Water resistance	No whitening or defects	ASTM D870
Viscosity (#4 Ford Cup)	20 seconds maximum	Package Lacquer
Removal of cured lacquer	Shall be removable	See paragraph 3.9

#### 4. REGULATORY REQUIREMENTS

4.1 **Code of Federal Regulations.** The paint shall not contain any substance listed in the following Code of Federal Regulations as a Hazardous Air Pollutant, Clean Water Act Pollutant, or Ozone Depleting Substance.

- a) 40 CFR part 61
- b) 40 CFR part 401
- c) 40 CFR part 82

#### 5. QUALITY ASSURANCE PROVISIONS

5.1. **Quality Assurance.** The contractor shall maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description and that the product conforms to the producer's own drawing, specifications, standards, and

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quality assurance practices, and is 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 Commercial Item Description.

5.2.1 The manufacturer of the item must have been producing a product meeting the requirements of this Commercial Item Description for at least 2 years.

5.2.2 The company must have sold at least 1,000 units meeting this Commercial Item Description in the commercial market place over the past 2 years.

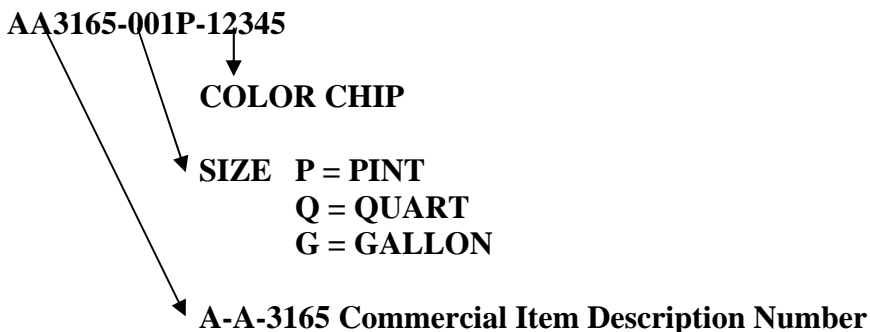
## 6. PACKAGING

**6.1. Packaging, packing, and marking.** The paint shall be furnished in quantities specified, and the packaging, packing, and marking shall be as prescribed in government procurement documents.

## 7. NOTES

**7.1. Intended use.** The lacquer conforming to this Commercial Item Description is intended for use on metal surfaces. Best performance will be obtained when the lacquer is applied over a metal surface properly pretreated and primed with a lacquer resisting primer. The lacquer should not be used over bare metal.

**7.2. Part Identification Number (PIN).** The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.



**7.3. Referenced Documents.** The following documents of the issues on date of invitation for bids or request for proposal form part of this Commercial Item Description to the extent specified herein.

**Federal Standards:**

- FED-STD-141 Paint, Varnish, Lacquer, and Related Materials; Methods of inspection, Sampling, and Testing
- FED-STD-595 Colors Used in Government Procurement

**Code of Federal Regulations:**

- 40 CFR part 61 National Emission Standards for Hazardous Air Pollutants
- 40 CFR part 401 Clean Water Act Toxic Pollutants
- 40 CFR part 82 Protection of Stratospheric Ozone

**American Society for Testing and Materials (ASTM) Standards:**

- D522 Test Methods for Mandrel Bend Test of Attached Organic Coatings
- D822 Practice for Filtered Open-Flame, Carbon-Arc Exposures of Paint and Related Coatings
- D870 Practice for Testing Water Resistance of Coatings Using Water Immersion
- D1640 Drying, Curing, or Film Formation of Organic Coatings at Room Temperature Materials
- D1644 Test Methods for Nonvolatile Content of Varnishes
- D1729 Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
- D2244 Practice for Calculation of Color Tolerances and Color Differences From Instrumentally Measured Color Coordinates
- D2369 Test Method for Volatile Content of Coatings
- D2372 Practice for Separation of Vehicle from Solvent-Reducible Paints
- D3359 Test Methods for Measuring Adhesion by Tape Test
- D4302 Specification for Artist's Oil, Resin-Oil, and Alkyd Paints

**7.4. Source of Documents.**

7.4.1 **Federal Regulation.** Code of Federal Regulation references (CFR) can be accessed free, on-line from the Government Printing Office CFR Retrieval site, <http://www.gpoaccess.gov/cfr/retrieve.html>.

7.4.2 **American Society for Testing and Materials.** Copies of ASTM specifications and standards may be purchased on-line from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 at <http://www.astm.org/>.

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**7.4.3 Federal Specifications.** Copies of Federal Specifications and standards may be obtained free, on-line from Defense Logistics Agency Acquisition Streamlining and Standardization Information System (DLA ASSIST) at <http://assist.daps.dla.mil/quicksearch/>. Fed-Std-595 reference color chips can be purchased by contacting the following office:

GSA Property Management  
 GSA/CO/3FPD  
 470 L'Enfant Plaza East, SW, Suite 8100  
 Washington DC 20407  
 202-619-8925, Fax 202-619-8985

**7.4.4 U.S. EPA "Method 24".** A copy of U.S. EPA "Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings" (Method 24) is available at the following web site:  
<http://www.epa.gov/ttn/emc/promgate.html>.

**7.4.5 National Stock Numbers (NSNs).** The following is a list of NSNs assigned that corresponds to this Commercial Item Description. The list may not be indicative of all possible NSNs associated with the Commercial Item Description.

UI = Unit of Issue; Color Number = Fed-Std-595 Color Chip Number

NSN	UI	Color Number
8010-00-166-3164	QT	CLEAR
8010-00-171-1509	GL	17038
8010-00-242-6315	GL	17875
8010-00-242-6318	QT	15044
8010-00-242-6319	GL	15044
8010-00-248-2838	QT	13538
8010-00-248-2839	GL	13538
8010-00-251-6495	GL	CLEAR
8010-00-251-6500	GL	16081
8010-00-251-6501	GL	12197
8010-00-251-6503	QT	11136

NSN	UI	Color Number
8010-00-257-5376	QT	10080
8010-00-257-5377	QT	17875
8010-00-515-1567	GL	14187
8010-00-598-5158	QT	16473
8010-00-598-5159	GL	14084
8010-00-634-7320	GL	11136
8010-00-663-3036	QT	15102
8010-00-680-0143	GL	16473
8010-00-680-0144	GL	15102
8010-01-459-4687	QT	17038
8010-01-499-2711	QT	17925

Review Activities:  
 Army MR, MU  
 Navy AS  
 Air Force 84, 85

Preparing Activity: GSA-FAS (FSS)

**FSC 8010**