

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 2nd coat of lacquer to the 1st “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, COLOR¹

| Color | Fed Std 595B Color Chip # | Contrast Ratio | Color | Fed Std 595B Color Chip # | Contrast Ratio |
|---------------|------------------------------|-------------------|-----------------|------------------------------|-------------------|
| Light Yellow | 13655 | 0.86 | Insignia White | 17825 ² | 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 nd 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

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.

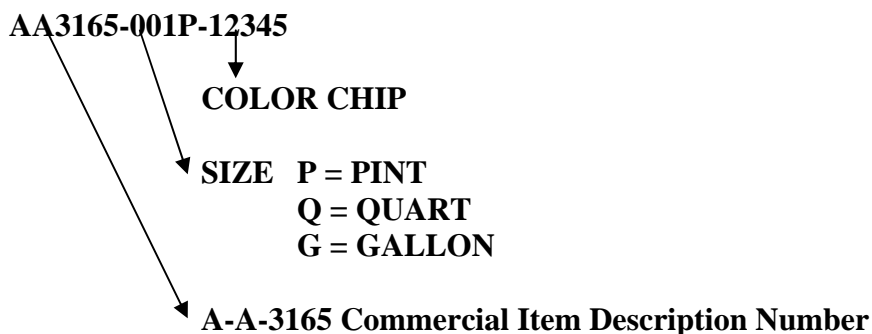
6. PACKAGING

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/>.

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