

TT-I-00521a(GPO)
May 20, 1959
Interim Revision of
Fed. Spec. TT-I-521
December 9, 1930

INTERIM FEDERAL SPECIFICATION

INK, COPYING AND RECORD

This Interim Federal Specification was developed jointly by the Technical Division, Government Printing Office, Washington 25, D. C. , and the Standardization Division, Federal Supply Service, General Services Administration, Washington 25, D. C. , based upon currently available technical information (see section 6, par. 6.4). It is recommended that Federal agencies use it in procurement and forward any recommendations for changes to the preparing activities at the addresses shown above. The General Services Administration has authorized Federal agencies to use this Interim Federal Specification as a valid exception to Federal Specification TT-I-521, dated December 9, 1930.

1. SCOPE AND CLASSIFICATION

1.1 Scope. - The copying and record ink covered by this specification is intended for writing permanent records. It is not recommended for making more than one press copy. It can be used in fountain pens.

1.2 Classification.

1.2.1 Type. - the Copying and record ink shall be of the permanent type.

1.2.2 Color. - the color of the ink shall be blue-black.

2. APPLICABLE SPECIFICATIONS, STANDARDS AND OTHER PUBLICATIONS

2.1 Specifications and standards. - The following specifications and standards, of the issues in effect on date of invitation for bids, form a part of this specification:

Federal Specifications:

UU-P-121 - Paper, Bond and Writing, White and Colored.
CCC-T-191 - Textile Test Methods.
PPP-B-636 - Boxes, Fiber.

Federal Standards:

Fed. Std. No. 102 - Preservation, Packaging, and Packing Levels.
Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).

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(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications, Standards, and Handbooks and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration, Regional Offices in Boston, New York, Atlanta, Chicago, Kansas City, Mo., Dallas, Denver, San Francisco, Los Angeles, Seattle, and Washington, D. C.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications, Standards, and Handbooks from established distribution points in their agencies.)

2.2 Other publication. - The following Pharmacopoeia Convention publication, of the issue in effect on date of invitation for bids, forms a part of this specification.

The Pharmacopoeia of the United States.

(The Pharmacopoeia of the United States is published by the Mack Printing Company, Easton, Pennsylvania.)

3. REQUIREMENTS

3.1 The manufacturer is given wide range in the selection of raw materials and processes of manufacture, provided that the ink produced is as of high quality as the standard prescribed herein.

3.2 The copying and record ink shall be iron gallo-tannate ink, not inferior to one properly prepared according to the following formula, the ingredients of which shall conform to the strength and quality prescribed in the United States Pharmacopoeia:

	Grams
Tannic acid - - - - -	23.4
Gallic acid crystals - - - - -	7.7
Ferrous sulphate crystals - - - - -	30.0
Citric acid - - - - -	25.0
Carbolic acid (phenol) - - - - -	1.0
Soluble blue (Brit. Col. Index No. 707; Schultz No. 539 -	3.5
Water (distilled) to make a volume of 1 liter at 20° C. -	

3.3 Containers (bottles). - Unless otherwise specified, the ink shall be furnished in 2-ounce, 4-ounce, 1-pint, or 1-quart bottles, as ordered (see section 5 and 6.1).

4. SAMPLING, INSPECTION, AND TEST PROCEDURES

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4.1 Sampling. - An original unopened bottle, bearing all of the manufacturer's marks, shall be sent to the testing laboratory, when such bottle contains not less than 16 fluid ounces (1 pint). When the ink is furnished in smaller bottles, enough of them to aggregate at least 16 fluid ounces shall be sent to the laboratory with all marks intact.

4.2 Preliminary examination. - The 16-ounce bottle, or the combined contents of the smaller bottles, shall be allowed to stand undisturbed for 24 hours to allow any sediment to settle. Sufficient of the clear ink for all of the tests shall then be drawn off in a pipette. The bottle shall then be inverted slowly, and the amount and character of any sediment noted.

4.3 Tests.

4.3.1 The sample shall be tested in comparison with standard ink made according to the formula specified in 3.2.

4.3.2 Streaks shall be made by allowing measured portions, of about 0.6 ml. each, of the ink to flow freely across a sheet of type III, 40-pound, white bond paper conforming to Federal Specification UU-P-121, which is pinned to a board or clamped to a pane of glass, and held at an inclination of 45°. For better comparison, streaks of the standard ink shall be made on the same sheet as those of the sample. (See 6.3.)

4.3.3 When the streaks are dry, the sheet shall be examined on the front and reverse sides. The streaks of the sample shall have the same general form as those of the standard; they shall be as uniform in color when viewed from the front and the back, and shall show no more evidence of striking through the paper.

4.3.4 The paper shall be cut into inch-wide strips at right angles to the streaks. Some of the strips shall be kept away from light and fumes, and others used for making the following tests, after they have been exposed to diffused daylight for one week.

4.3.5 After a week's exposure to diffused daylight, the streaks of the sample shall be as intensely black as those of the standard.

4.3.6 After exposure for a period of 48 hours to the radiation from a glass-enclosed carbon-arc, such as the Fade-Ometer described in Method 5660 of Federal Specification CCC-T-191, the streaks of the sample shall show no more evidence of fading than those of the standard.

4.3.7 Some of the strips shall be soaked in water and some in 50 percent alcohol for 24 hours at room temperature. The sample shall show no greater loss of color than the standard.

Note. - Alcohol suitable for this test is ethyl alcohol conforming to Formula S. D. No. 1 (Specially Denatured No. 1) described in Internal Revenue Service, Treasury Department, Publication No. 201, Part 182, of Title 26 (1954), Code of Federal Regulations.

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4.3.8 Strips shall be soaked in bleaching powder solution containing two-hundredth normal chlorine. The effect upon the sample, in comparison with the standard, shall be noted after 15 minutes, 1 hour, and 24 hours at room temperature. The sample shall show no greater loss of color than the standard.

4.3.9 The content of metallic iron shall be determined in 10 ml. of the sample by any suitable chemical procedure. The content of metallic iron shall be not less than 0.58 gm. nor more than 0.70 gm. per 100 ml.

4.3.10 Twenty-five ml. each of the sample and of the standard shall be allowed to stand undisturbed in colorless glass vessels (50-ml. beakers) loosely covered with filter paper to keep out dust. After 2 week's exposure to diffused daylight and air, at ordinary room temperature, the sample shall be as free from mold and deposit upon its surface and upon the sides and bottom of the container as the standard.

4.3.11 The sample shall be no more corrosive to steel pens than the standard. For each sample under test, including the standard, select two new pens from the same box. Clean the pens with alcohol and then with ether, dry them in an oven at 105° C., and weigh each pair together to the nearest mg. Immerse each pair of pens in 25 ml. of the ink, contained in a small beaker or flask. After 48 hours remove the pens, wash and scrub them with water and a cloth to cleanse them thoroughly, rinse them with alcohol, dry them in an oven at 105° C., and weigh. If the pens in the sample lose more weight than those in the standard, the test shall be repeated with both the sample and the standard. If the loss in the sample is again greater than the loss in the standard ink, the sample shall be rejected.

5. PREPARATION FOR DELIVERY

5.1 Federal Standard No. 102 (for civilian agencies only). - The definitions and applications of the levels of packaging and packing shall be in accordance with Federal Standard No. 102.

5.2 Packaging. - Packaging shall be of the level specified in the invitation for bids, contract, or order (see 6.1).

5.2.1 Level A. - (To be supplied by the Department of Defense, if required.)

5.2.2 Level B.

5.2.2.1 Unit containers. - The volume of ink specified (i. e., 2-ounces, 4-ounces, 1-pint, or 1-quart) shall be packaged in commercial-type bottles in accordance with the manufacturer's standard practice. No unit (individual) boxing is required for 2-ounce or 4-ounce bottles. One-pint and one-quart bottles shall be unit (individually) packaged in corrugated fiberboard boxes, double-slide type, sized to snugly fit the bottle contained. Both ends of the box shall be tape-sealed to prevent accidental opening (see 5.4.1.2).

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5.2.2.2 Intermediate boxes. - Twelve (12) each unit bottles of either the 2-ounce or 4-ounce size, shall be intermediately packaged in a fiber box of appropriate size conforming to Federal Specification PPP-B-636, type I, class 1, fitted with full- or shoulder-height corrugated fiberboard partition assembly providing separate cells or sections for each unit bottle. Board for box shall test not less than 175 p. s. i., and all flaps shall be secured by use of suitable adhesive or stitching or a combination of the two methods. No intermediate packaging is required for 1-pint and 1-quart bottles packaged in unit boxes as specified in 5.2.2.1.

5.2.3 Level C. - Unless otherwise specified, standard commercial packaging is acceptable under this specification.

5.3 Packing. - Packing shall be of the level specified in the invitation for bids, contract, or order (see 6.1).

5.3.1 Level A. - (To be supplied by the Department of Defense, if required.)

5.3.2 Level B. - Four (4) intermediate boxes of 12 unit containers each (48 bottles) of either 2-ounce or 4-ounce size, shall be packed in a shipping container. Twelve (12) unit boxes (12 bottles) of either 1-ping or 1-quart size, shall be packed in a shipping container. Shipping containers shall conform to Federal Specification PPP-B-636, type I or II, class 1, style RSC or CSSC, of board testing not less than 200 p. s. i. Closure shall be with all flaps glued with a suitable adhesive or stitching or a combination of the two methods.

5.3.3 Level C. - Unless otherwise specified, the ink shall be packed in exterior shipping containers in accordance with standard commercial practice which (together with inner containers) shall comply with the carrier rules and regulations applicable to the mode of transportation, at the lowest transportation rate for such supplies.

5.4 Marking and labeling. - In addition to any special marking required in the contract or order, marking and labeling for civil agencies shall be in accordance with Federal Standard No. 123, and as follows:

5.4.1 Civil agencies. -

5.4.1.1 Unit containers (bottles). - Unless otherwise specified, each bottle shall be labeled with the name of the commodity, applicable Federal Stock Number, type and color, volume of contents, and name of the manufacturer.

5.4.1.2 Unit boxes and intermediate boxes. - Unless otherwise specified, unit and intermediate boxes shall be marked or labeled on one side or end as appropriate, with the name of the commodity, applicable Federal Stock Number, type and color, volume of contents, unit and quantity (e. g., Bottle- 1-Pt.; or 12-Ea. - 2-oz. Bottles), contract or order number, and name of manufacturer or contractor, if different. The word "TOP" with arrow pointing to the top shall appear on at least two (2) sides of the unit boxes to indicate the position of the 1-pint or 1-quart bottle within.

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5. 4. 1. 3 Shipping containers. - Unless otherwise specified, and in addition to any special marking required in the contract or order, shipping containers shall be marked in accordance with Federal Standard No. 123, including specification classification (such as type, color, etc., as applicable).

5. 4. 2 Military agencies. - (To be supplied by the Department of Defense).

6. NOTES

6. 1 Ordering data. - Purchasers should exercise any desired options offered herein. (See 3. 3, 5. 2, 5. 2. 3, 5. 3, 5. 3. 3, 5. 4, and 5. 4. 2.)

6. 2 To avoid confusion of names and for convenience, it is a common practice to refer to dyes by their numbers in one or both of the following books: Society of Dyers and Colourists, Colour Index, 1st ed. 1924; Gustav Schultz, Farbstofftabellen, 5th ed., 1914. The dye required for making the standard ink is one of the few which is suitable for this purpose, as well as for making ink on a commercial scale.

6. 3 For making ink streaks (4. 3. 2), a piece of glass tubing about 3. 5 mm. in bore and 250 mm. long is used. The ends can be fire-polished, but should not be constricted. A mark etched or scratched 62 mm. from one end indicates the required volume, 0. 6 ml. of ink. By drawing the ink up to the mark, holding the tube vertically against the paper near the top, and allowing the ink to flow suddenly down across the paper, uniform streaks will be obtained. Separate clean, dry tubes should be provided for the standard and the sample.

6. 4 This Interim Federal Specification represents initial action in the development of a Federal Specification (Revision of TT-I-521), for Ink, Copying and Record. The major change consists of a modification of Section 5 to provide standard packaging and packing requirements.

6. 5 It is believed that this specification adequately describes the characteristics necessary to secure the desired material, and that normally no samples will be necessary prior to award to determine compliance with this specification. If, for any particular purpose, samples with bids are necessary, they should be specifically asked for in the invitation for bids, and the particular purpose to be served by the bid sample should be definitely stated, the specification to apply in all other respects.

6. 6 This specification covers only the types, classes, grades, sizes, etc., of the commodity as generally purchased by the Federal Government, and is not intended to include all of the types, etc., which are commercially available.

Notice. -When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.