

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS

George K. Burgess, Director

CIRCULAR OF THE BUREAU OF STANDARDS, No. 197

[2d ed., issued November 10, 1927]

UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
INK, MARKING, INDELIBLE, FOR FABRICS

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 266a

[Revised March 1, 1926. Supersedes Federal Specifications Board specification No. 266]

This specification was officially promulgated by the Federal Specifications Board on December 6, 1924, for the use of the departments and independent establishments of the Government in the purchase of indelible marking ink for fabrics.

[The technical requirements of this specification shall become mandatory for all departments and independent establishments of the Government not later than June 1, 1926. They may be put into effect, however, at any earlier date, after promulgation.]

CONTENTS

	Page
I. General specifications.....	1
II. Types.....	1
III. Material and workmanship.....	2
IV. General requirements.....	2
V. Detail requirements.....	2
VI. Methods of inspection and tests.....	2
1. Method of taking samples.....	2
2. Tests.....	2
VII. Packing and marking.....	4
VIII. Notes.....	4

I. GENERAL SPECIFICATIONS

There are no general specifications applicable to this specification.

II. TYPES

The indelible marking ink shall be of the following types: (a) For laundry and household use, (b) for marking blankets and unsized or unstarched materials.

III. MATERIAL AND WORKMANSHIP

No details specified.

IV. GENERAL REQUIREMENTS

1. The ink shall contain ingredients of such nature that when applied to the fabric in the manner prescribed by the manufacturer's directions accompanying the sample it will withstand the tests described in Section VI.

2. In making awards the manufacturer's directions for applying the ink shall be regarded as an essential part of this specification, and no brand need be considered which, in the judgment of the purchaser, requires too tedious, troublesome, or expensive a manipulation.

V. DETAIL REQUIREMENTS

The manufacturer shall state the method of application which is recommended for his ink.

VI. METHODS OF INSPECTION AND TESTS

1. METHOD OF TAKING SAMPLES

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 1 fluid ounce. When the ink is furnished in smaller bottles, enough of them to aggregate at least 1 fluid ounce shall be sent to the laboratory with all marks intact.

2. TESTS

Test specimens shall be prepared by applying the ink to any closely woven fabric, either cotton or wool, in the exact manner prescribed by the manufacturer's directions accompanying the sample. Specimens so prepared shall be kept overnight and then subjected to the following tests:

1. The marks shall be clear and distinct, and there shall be no discoloration beyond the limits of the marks after standing two weeks.

2. The marks shall still be clearly legible after washing six times with each of the following solutions:

(a) SOAP SOLUTION.—The soap solution contains 7 g of white floating soap¹ and 7 g of modified soda (58 per cent of sodium carbonate and 42 per cent of sodium bicarbonate) in 1 liter of distilled water. The test specimens shall be immersed in the solution at 65 to 71° C. (149 to 160° F.) for 15 minutes. They shall then be rinsed five times in distilled water and dried. These operations of washing, rinsing, and drying shall be performed six times.

¹ United States Government master specification No. 23 (B. S. Circ. No. 123).

(b) OXALIC ACID.—The oxalic-acid solution contains 6 g of crystallized oxalic acid dissolved in 1 liter of 28 per cent acetic acid. The test specimens shall be immersed in the solution at 65 to 71° C. (149 to 160° F.) for 10 minutes and rinsed and dried as in (a). These operations of washing, rinsing, and drying shall be performed six times.

(c) SODIUM BISULPHITE.—The sodium-bisulphite solution contains 5 g of sodium bisulphite and 72 ml² of hydrochloric acid of specific gravity 1.11 in 1 liter of distilled water. The test specimens shall be immersed in the solution at 65 to 71° C. (149 to 160° F.) for 10 minutes and rinsed and dried as in (a). These operations of washing, rinsing, and drying shall be performed six times.

(d) BLEACHING SOLUTION.—A stock of bleaching solution containing 1.4 per cent of available chlorine is prepared. One hundred milliliters of this solution shall be diluted with 1,300 ml of distilled water. The test specimens shall be immersed in this solution at 65 to 71° C. (149° to 160 F.) for five minutes and rinsed and dried as in (a). These operations of washing, rinsing, and drying shall be performed six times.

3. Further test specimens for the determination of the effect of the ink on the breaking strength of cotton and wool shall be prepared as follows:

Strips 4 inches wide and 36 inches long shall be cut in both the warp and the filling directions from a suitable closely woven fabric, either cotton or wool. Each strip shall be cut into six test specimens 6 inches long. Three specimens of each strip shall be left untreated; to the remaining three the ink shall be applied across the width at the center in a streak approximately 1 inch wide. The breaking strength of the untreated fabric and of the treated fabric 10 days after being marked shall be determined by the standard grab method. The breaking strength of the treated fabric shall be not less than 90 per cent of the breaking strength of the untreated fabric.

The machine used for this test shall be of the inclination balance type. The capacity of the machine shall be such that the arm will not go beyond a maximum angle of 45° in breaking the strips. (Machines of less capacity tend to give low results.) The lower or pulling jaw shall travel at a uniform rate of 12 inches per minute under no load. The distance between the jaws shall be 3 inches at the start of the test. The inside or back half of each jaw shall be 2 inches or more in width; the other half shall be 1 inch in width. The jaws shall have smooth and flat surfaces with edges slightly rounded to prevent cutting. If a specimen slips in the jaws, breaks

² The expression ml is the abbreviation for milliliter, which is the volume of 1 g of water at its maximum density. The expressions cc and cm³ are often loosely employed instead of ml.

in the jaws, or for any reason due to faulty operation one of the results falls markedly below the general average, that result shall be disregarded, another specimen shall be taken from the same threads, and the result of this break shall be included in the average.

VII. PACKING AND MARKING

Indelible marking ink for fabrics purchased under this specification shall be packed and marked as required by the purchaser.

VIII. NOTES

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
5 CENTS PER COPY
▽

