

N-C-541F  
 AMENDMENT-1  
 March 29, 1977

FEDERAL SPECIFICATION

STARCHES, EDIBLE

This amendment, which forms a part of Federal Specification N-C-541F, dated January 16, 1975, was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

PAGE 4

Table I, under "Maximum limits of". Delete "(NX 6.25 1/)" and substitute "(N x 6.25) 1/".

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Table II. Delete all under "Type", "Bostwick reading" and "Brookfield reading" and substitute as follows:

<u>"Type</u>	<u>Bostwick reading</u>	<u>Brookfield reading</u>
I	Not less than 7.5 nor more than 10.0	55-75 (220,000-300,000 centipoises) <u>1/</u>
II	Not less than 3.0 nor more than 7.5 centimeters	200-350 (20,000-35,000 centipoises)
III	Not less than 3.5 nor more than 6.5 centimeters	200-300 (20,000-30,000 centipoises)

1/ Multiply 55-75 meter readings by factor of 4,000 to calculate centipoises."

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Table IV, defect 202. Delete "3-pounds, 5/8 ounces (1.38 kg)" and substitute: "3 pounds, 15-3/4 ounces (1.81 kg)". Add "2/" to table title and add footnote as follows: "2/ For defects 201 and 202, weigh to the nearest 1/8 ounce (nearest g), for defect 203, weigh to the nearest 1/2 ounce (nearest 10 g)."

Table V, defect 104, after "gritty". Add "particles".

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4.4, line 3, after "one-pound". Insert "(0.45 kg)".

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4.5.1.1, line 3. Delete period after "attached" and insert "and". Delete "Set" and substitute "set". Place a period after "surface". Capitalize "using".

4.5.3 Viscosity test (type II), line 1. Delete "procedures" and substitute "procedure".

Subparagraph (b), line 2. Delete "with" and substitute "at".

Subparagraph (c). Delete and substitute: "(c) Add 200 ml of distilled water at 77°F (25°C) and sufficient (10 percent) citric acid solution to a pH of  $3.5 \pm 0.1$  (see 4.5.3.1). Mix 3 minutes at No. 2 speed."

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subparagraph (e), line 2. Delete " $160^{\circ}\text{F}$  ( $71^{\circ}\text{C}$ )  $\pm 5^{\circ}\text{F}$  ( $\pm 3^{\circ}\text{C}$ )" and substitute " $170^{\circ} \pm 2^{\circ}\text{F}$  ( $77^{\circ} \pm 1^{\circ}\text{C}$ )".

Subparagraph (f), line 1. Delete "not less than 18 - 24 hours" and substitute "18 - 24 hours". Delete "read" and substitute "measure".

4.5.3.1, lines 1 and 2. Delete "The pH of starch ... procedures:" and substitute "The amount of ten percent citric acid solution required to adjust the pH to  $3.5 \pm 0.1$  shall be predetermined as follows:".

Subparagraph (b), line 1. Delete "paste" and substitute "slurry".

Capitalize "a" in "add".

Subparagraph (c). Delete and substitute as follows: "(c) Using a pH meter, add ten percent citric acid solution from a 1 ml graduated pipette while stirring. Ten times the amount of citric acid solution to adjust pH to  $3.5 \pm 0.1$  is the amount required to be used in test procedure in 4.5.3 above."

4.5.3.2, subparagraph (d), line 2. Delete " $185^{\circ}\text{F}$  ( $85^{\circ}\text{C}$ )  $\pm 3^{\circ}\text{F}$  ( $\pm 2^{\circ}\text{C}$ )" and substitute " $170^{\circ} \pm 2^{\circ}\text{F}$  ( $77^{\circ} \pm 1^{\circ}\text{C}$ )".

Subparagraph (e), lines 1 and 2. Delete "not less than".  
Line 4. Capitalize "brookfield".

PAGE 10 (con.)

Add the following new paragraph:

"4.5.3.3 Viscosity test (type I). Viscosity test procedure for a simulated pie filling using type I cornstarch shall be as follows:

(a) Combine 30 grams sugar, 15 grams cornstarch and 200 ml distilled water, 77°F (25°C) in a 400 ml beaker.

(b) Place beaker in steam bath and heat while mixing to 190°F (88°C). Hold at that temperature for 5 minutes.

(c) Stir sample, remove from steam bath, transfer immediately to Bostwick Consistometer and measure the distance of flow (in centimeters) in 30 seconds at 170°F ± 2°F (77° ± 1°C).

(d) Pour the starch dispersion from Bostwick back into 400 ml beaker. Cover beaker with aluminum foil and let stand at room temperature for 18-24 hours and determine viscosity on a RVT (or equivalent) Brookfield Viscometer equipped with helipath stand using a CT bar at 2.5 rpm. The viscosity reading shall be corrected to a Brookfield silicone reading prior to reporting the results."

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5.1, line 6, under "Allowable unit variations". Delete "3/8-ounce (11 g)" and substitute "1/4 ounce (nearest g)".

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5.2, line 10. Delete "sac" and substitute "sack".

5.2.2.1.1, line 1. Delete "6.3" and substitute "6.4".

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5.2.3.1.1, line 1. Delete "6.4" and substitute "6.5".

## Custodians:

Army - GL  
Navy - SA  
Air Force - 45

## Preparing activity:

Army - GL

## Civil Agency Coordinating Activities:

## Review activities:

Army - MD  
Navy - MC, MS  
DSA - SS

GSA - FSS  
VA - DMS  
AGR - AMS  
HEW - FDA

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