

**§ 175.380**

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(b) The coatings are prepared from vinylidene chloride copolymers produced by copolymerizing vinylidene chloride with acrylonitrile, methyl acrylate, and acrylic acid. The finished copolymers contain at least 50 weight-percent of polymer units derived from vinylidene chloride.

(c) Optional adjuvant substances employed in the production of the coatings or added thereto to impart desired properties may include sodium dodecylbenzenesulfonate in addition to substances described in §174.5(d) of this chapter.

(d) The coating in the finished form in which it is to contact food, when extracted with the solvent or solvents characterizing the type of food, and under the conditions of time and temperature characterizing the conditions of its intended use as determined from tables 1 and 2 of §176.170(c) of this chapter, shall yield net chloroform-soluble extractives in each extracting solvent not to exceed 0.5 milligram per square inch of coated surface as determined by the methods described in §176.170(d) of this chapter. In testing the finished food-contact articles, a separate test sample is to be used for each required extracting solvent.

(e) Acrylonitrile copolymers identified in this section shall comply with the provisions of §180.22 of this chapter.

**§ 175.380 Xylene-formaldehyde resins condensed with 4,4'-isopropylidenediphenol-epichlorohydrin epoxy resins.**

The resins identified in paragraph (a) of this section may be safely used as a food-contact coating for articles intended for use in contact with food, in accordance with the following prescribed conditions.

(a) The resins are produced by the condensation of xylene-formaldehyde resin and 4,4'-isopropylidenediphenol-epichlorohydrin epoxy resins, to which may have been added certain optional adjuvant substances required in the production of the resins or added to impart desired physical and technical properties. The optional adjuvant substances may include resins produced by the condensation of allyl ether of mono-, di-, or trimethylol phenol and capryl alcohol and also may include

substances identified in §175.300(b)(3), with the exception of paragraph (b)(3) (xxxi) and (xxxii) of that section.

(b) The resins identified in paragraph (a) of this section may be used as a food-contact coating for articles intended for contact at temperatures not to exceed 160 °F with food of Types I, II, VI-A and B, and VIII described in table 1 of §176.170(c) of this chapter provided that the coating in the finished form in which it is to contact food meets the following extractives limitations when tested by the methods provided in §175.300(e):

(1) The coating when extracted with distilled water at 180 °F for 24 hours yields total extractives not to exceed 0.05 milligram per square inch of food-contact surface.

(2) The coating when extracted with 8 percent (by volume) ethyl alcohol in distilled water at 160 °F for 4 hours yields total extractives not to exceed 0.05 milligram per square inch of food-contact surface.

(c) The resins identified in paragraph (a) of this section may be used as a food-contact coating for articles intended for contact at temperatures not to exceed room temperature with food of Type VI-C described in table 1 of §176.170(c) of this chapter provided the coating in the finished form in which it is to contact food meets the following extractives limitations when tested by the methods provided in §175.300(e):

(1) The coating when extracted with distilled water at 180 °F for 24 hours yields total extractives not to exceed 0.05 milligram per square inch of food-contact surface.

(2) The coating when extracted with 50 percent (by volume) ethyl alcohol in distilled water at 180 °F for 24 hours yields total extractives not to exceed 0.05 milligram per square inch.

**§ 175.390 Zinc-silicon dioxide matrix coatings.**

Zinc-silicon dioxide matrix coatings may be safely used as the food-contact surface of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, subject to the provisions of this section;

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(a) The coating is applied to a metal surface, cured, and washed with water to remove soluble substances.

(b) The coatings are formulated from optional substances which include:

(1) Substances generally recognized as safe.

(2) Substances for which safe conditions of use have been prescribed in §175.300.

(3) Substances identified in paragraph (c) of this section, subject to the limitations prescribed.

(c) The optional substances permitted are as follows:

List of substances	Limitations
Ethylene glycol .....	As a solvent removed by water washing.
Iron oxide.	
Lithium hydroxide .....	Removed by water washing.
Methyl orange .....	As an acid-base indicator.
Potassium dichromate .....	Removed by water washing.
Silica gel.	
Sodium silicate.	
Zinc, as particulate metal.	

(d) The coating in the finished form in which it is to contact food, when extracted with the solvent or solvents characterizing the type of food, and under the conditions of its intended use as shown in table 1 and 2 of §175.300(d) (using 20 percent alcohol as the solvent when the type of food contains approximately 20 percent alcohol) shall yield total extractives not to exceed those prescribed in §175.300(c)(3); lithium extractives not to exceed 0.025 milligram per square inch of surface; and chromium extractives not to exceed 0.05 microgram per square inch of surface.

(e) The coatings are used as food-contact surfaces for bulk reusable containers intended for storing, handling, and transporting food.

**PART 176—INDIRECT FOOD ADDITIVES: PAPER AND PAPERBOARD COMPONENTS**

**Subpart A [Reserved]**

**Subpart B—Substances for Use Only as Components of Paper and Paperboard**

- Sec.  
 176.110 Acrylamide-acrylic acid resins.  
 176.120 Alkyl ketene dimers.  
 176.130 Anti-offset substances.  
 176.150 Chelating agents used in the manufacture of paper and paperboard.

- 176.160 Chromium (Cr III) complex of *N*-ethyl-*N*-heptadecylfluoro-octane sulfonyl glycine.  
 176.170 Components of paper and paperboard in contact with aqueous and fatty foods.  
 176.180 Components of paper and paperboard in contact with dry food.  
 176.200 Defoaming agents used in coatings.  
 176.210 Defoaming agents used in the manufacture of paper and paperboard.  
 176.230 3,5-Dimethyl-1,3,5,2*H*-tetrahydrothiadiazine-2-thione.  
 176.250 Poly-1,4,7,10,13-pentaaza-15-hydroxyhexadecane.  
 176.260 Pulp from reclaimed fiber.  
 176.300 Slimicides.  
 176.320 Sodium nitrate-urea complex.  
 176.350 Tamarind seed kernel powder.

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SOURCE: 42 FR 14554, Mar. 15, 1977, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 176 appear at 61 FR 14482, Apr. 2, 1996, 66 FR 56035, Nov. 6, 2001, and 70 FR 72074, Dec. 1, 2005.

**Subpart A [Reserved]**

**Subpart B—Substances for Use Only as Components of Paper and Paperboard**

**§176.110 Acrylamide-acrylic acid resins.**

Acrylamide-acrylic acid resins may be safely used as components of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, subject to the provisions of this section.

(a) Acrylamide-acrylic acid resins are produced by the polymerization of acrylamide with partial hydrolysis or by the copolymerization of acrylamide and acrylic acid.

(b) The acrylamide-acrylic acid resins contain less than 0.2 percent residual monomer.

(c) The resins are used as adjuvants in the manufacture of paper and paperboard in amounts not to exceed that necessary to accomplish the technical effect and not to exceed 2 percent by weight of the paper or paperboard.