

§ 175.270

21 CFR Ch. I (4-1-12 Edition)

used as food-contact coatings, in accordance with the following prescribed conditions:

(a) For the purpose of this section, partial phosphoric acid esters of polyester resins are prepared by the reaction of trimellitic anhydride with 2,2-dimethyl-1,3-propanediol followed by reaction of the resin thus produced with phosphoric acid anhydride to produce a resin having an acid number of 81 to 98 and a phosphorus content of 4.05 to 4.65 percent by weight.

(b) The coating is chemically bonded to the metal and cured at temperatures exceeding 450 °F.

(c) The finished food-contact coating, 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 §175.300(d), yields total extractives in each extracting solvent not to exceed 0.3 milligrams per square inch of food-contact surface, as determined by the methods described in §175.300(e), and the coating yields 2,2-dimethyl-1,3-propanediol in each extracting solvent not to exceed 0.3 micrograms per square inch of food-contact surface. In testing the finished food-contact articles, a separate test sample is to be used for each required extracting solvent.

§ 175.270 Poly(vinyl fluoride) resins.

Poly(vinyl fluoride) resins identified in this section may be safely used as components of food-contact coatings for containers having a capacity of not less than 5 gallons, subject to the provisions of this section.

(a) For the purpose of this section, poly(vinyl fluoride) resins consist of basic resins produced by the polymerization of vinyl fluoride.

(b) The poly(vinyl fluoride) basic resins have an intrinsic viscosity of not less than 0.75 deciliter per gram as determined by ASTM method D1243-79, "Standard Test Method for Dilute Solution Viscosity of Vinyl Chloride Polymers," which is incorporated by reference. Copies may be obtained from the American Society for Testing Materials, 100 Barr Harbor Dr., West Conshohocken, Philadelphia, PA 19428-2959, or may be examined at the Na-

tional Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(1) *Solvent.* N,N-Dimethylacetamide, technical grade.

(2) *Solution.* Powdered resin and solvent are heated at 120 °C until the resin is dissolved.

(3) *Temperature.* Flow times of the solvent and solution are determined at 110 °C.

(4) *Viscometer.* Cannon-Ubbelohde size 50 semimicro dilution viscometer (or equivalent).

(5) *Calculation.* The calculation method used is that described in appendix X 1.3 (ASTM method D1243-79, "Standard Test Method for Dilute Solution Viscosity of Vinyl Chloride Polymers," which is incorporated by reference; see paragraph (b) of this section for availability of the incorporation by reference) with the reduced viscosity determined for three concentration levels not greater than 0.5 gram per deciliter and extrapolated to zero concentration for intrinsic viscosity. The following formula is used for determining reduced viscosity:

$$\text{Reduced viscosity in terms of deciliters per gram} = \frac{t - t_0}{t_0 \times c}$$

where:

t=Solution efflux time.

*t*₀=Solvent efflux time.

c=Concentration of solution in terms of grams per deciliter.

[42 FR 14534, Mar. 15, 1977, as amended at 47 FR 11839, Mar. 19, 1982; 49 FR 10107, Mar. 19, 1984]

§ 175.300 Resinous and polymeric coatings.

Resinous and polymeric 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, in accordance with the following prescribed conditions:

(a) The coating is applied as a continuous film or enamel over a metal substrate, or the coating is intended for