

**Food and Drug Administration, HHS**

**§ 177.2420**

Carbon black (channel process).	
Diatomaceous earth.	
Glass fiber.	
Hexamethylenetetramine .....	For use as curing agent.
Mica.	
Oxalic acid .....	For use as catalyst.
Zinc stearate .....	For use as lubricant.

scribed in §174.5(d) of this chapter and the following:

Substance	Limitations
Diphenyl sulfone .....	Not to exceed 0.2 percent by weight as a residual solvent in the finished basic resin.

(c) The finished food-contact article, when extracted with distilled water at reflux temperature for 2 hours, using a volume-to-surface ratio of 2 milliliters of distilled water per square inch of surface tested, shall meet the following extractives limitations:

- (1) Total extractives not to exceed 0.15 milligram per square inch of food-contact surface.
- (2) Extracted phenol not to exceed 0.005 milligram per square inch of food-contact surface.
- (3) No extracted aniline when tested by a spectrophotometric method sensitive to 0.006 milligram of aniline per square inch of food-contact surface.

(d) In accordance with good manufacturing practice, finished molded articles containing the phenolic resins shall be thoroughly cleansed prior to their first use in contact with food.

**§ 177.2415 Poly(aryletherketone) resins.**

Poly(aryletherketone) resins identified in paragraph (a) of this section may be safely used as articles or components of articles intended for repeated use in contact with food subject to the provisions of this section.

(a) *Identity.* For the purposes of this section, poly(aryletherketone) resins are poly(*p*-oxyphenylene *p*-oxyphenylene *p*-carboxyphenylene) resins (CAS Reg. No. 29658-26-2) produced by the polymerization of hydroquinone and 4,4'-difluorobenzophenone, and have a minimum weight-average molecular weight of 12,000, as determined by gel permeation chromatography in comparison with polystyrene standards, and a minimum mid-point glass transition temperature of 142 °C, as determined by differential scanning calorimetry.

(b) *Optional adjuvant substances.* The basic resins identified in paragraph (a) may contain optional adjuvant substances used in their production. These adjuvants may include substances de-

(c) *Extractive limitations.* The finished food contact article, when extracted at reflux temperatures for 2 hours with the following four solvents, yields in each extracting solvent net chloroform soluble extractives not to exceed 0.05 milligrams per square inch of food contact surface: Distilled water, 50 percent (by volume) ethanol in distilled water, 3 percent acetic acid in distilled water, and *n*-heptane. In testing the final food contact article, a separate test sample shall be used for each extracting solvent.

[63 FR 20315, Apr. 24, 1998]

**§ 177.2420 Polyester resins, cross-linked.**

Cross-linked polyester resins may be safely used as articles or components of articles intended for repeated use in contact with food, in accordance with the following prescribed conditions:

(a) The cross-linked polyester resins are produced by the condensation of one or more of the acids listed in paragraph (a)(1) of this section with one or more of the alcohols or epoxides listed in paragraph (a)(2) of this section, followed by copolymerization with one or more of the cross-linking agents listed in paragraph (a)(3) of this section:

- (1) *Acids:*
- Adipic.
  - Fatty acids, and dimers thereof, from natural sources.
  - Fumaric.
  - Isophthalic.
  - Maleic.
  - Methacrylic.
  - Orthophthalic.
  - Sebacic.
  - Terephthalic.
  - Trimellitic.

(2) *Polyols and polyepoxides:*

- Butylene glycol.
- Diethylene glycol.
- 2,2-Dimethyl-1,3-propanediol.
- Dipropylene glycol.
- Ethylene glycol.
- Glycerol.