§ 177.2260 Filters, resin-bonded.

Resin-bonded filters may be safely used in producing, manufacturing, processing, and preparing food, subject to the provisions of this section.

(a) Resin-bonded filters are prepared from natural or synthetic fibers to which have been added substances required in their preparation and finishing, and which are bonded with resins prepared by condensation or polymerization of resin-forming materials, together with adjuvant substances required in their preparation, application, and curing.

(b) The quantity of any substance employed in the production of the resin-bonded filter does not exceed the amount reasonably required to accomplish the intended physical or technical effect or any limitation further provided.

(c) Any substance employed in the production of resin-bonded filters that is the subject of a regulation in parts 174, 175, 176, 177, 178 and §179.45 of this chapter conforms with any specification in such regulation.

(d) Substances employed in the production of resin-bonded filters include the following, subject to any limitations provided:

LIST OF SUBSTANCES AND LIMITATIONS

(1) Fibers:

Cellulose pulp.
Cotton.
Nylon. (From nylon resins complying with the provisions of applicable regulations in subchapter B of this chapter.
Polyethylene terephthalate complying in composition with the provisions of §177.1630; for use in inline filtration only as provided for in paragraphs (e) and (f) of this section.
Rayon (viscose).

(2) Substances employed in fiber finishing:

BHT.
Butyl (or isobutyl) palmitate or stearate.
2,5-Di-tert-butyl hydroquinone for use only in lubricant formulations for rayon fiber finishing and at a usage level not to exceed 0.1 percent by weight of the lubricant formulations.
Dimethylpolysiloxane.
4-Ethyl-4-hexadecyl morpholinium ethyl sulfate for use only as a lubricant in the manufacture of polyethylene terephthalate fibers specified in paragraph (d)(1) of this section at a level not to exceed 0.03 percent by weight of the finished fibers.
Fatty acid (C_{10}-C_{18}) diethanolamide condensates.
Fatty acids derived from animal or vegetable fats and oils, and salts of such acids, single or mixed, as follows:

Aluminum.
Ammonium.
Calcium.
Magnesium.
Potassium.
Sodium.
Triethanolamine.

Fatty acid (C_{10}-C_{18}) mono- and diesters of polyoxyethylene glycol (molecular weight 400–3,000).
Methyl esters of fatty acids (C_{10}-C_{18}).
Mineral oil.
Polybutene, hydrogenated; complying with the identity prescribed under §178.3740 (b) of this chapter.
Polyoxyethylene (4 mol) ethylenediamine monolauramide for use only in lubricant formulations for rayon fiber finishing and...
§ 177.2260

(a) Resin-bonded filters conforming with the specifications of paragraph (f) (1) of this section are used as provided in paragraph (e)(2) of this section:

(1) Total extractives. The finished filter, when exposed to distilled water at 145 °F for 2 hours, yields total extractives not to exceed 4 percent by weight of the filter.

(b) Conditions of use. It is used to filter milk or potable water at operating temperatures not to exceed 145 °F.

(c) Colorants used in accordance with §178.3297 of this chapter.

(d) Resin-bonded filters conforming with the specifications of paragraph (g) (1) of this section are used as provided in paragraph (h)(2) of this section:

(1) Total extractives. The finished filter, when exposed to n-hexane at reflux temperature for 2 hours, yields total extractives not to exceed 0.5 percent by weight of the filter.

(e) Colorants used in accordance with §178.3297 of this chapter.

(f) Total extractives. The finished filter, when exposed to distilled water at 212 °F for 2 hours, yields total extractives not to exceed 4 percent by weight of the filter.

(g) Colorants used in accordance with §178.3297 of this chapter.

(h) Resin-bonded filters conforming with the specifications of paragraph (i) (1) of this section are used as provided in paragraph (j)(2) of this section:

(1) Total extractives. The finished filter, when exposed to distilled water for 2 hours at a temperature equivalent to, or higher than, the filtration temperature of the aqueous food, yields total extractives not to exceed 4 percent, by weight, of the filter.

(i) Conditions of use. It is used to filter milk, coffee, tea, and potable water at temperatures not to exceed 212 °F.

(j) Conditions of use. It is used in commercial filtration of bulk quantities of nonalcoholic, aqueous foods having a pH above 5.0.

(k) Resin-bonded filters conforming with the specifications of paragraph (i) (1) of this section are used as provided in paragraph (j)(2) of this section:

(1) Total extractives. The finished filter, when exposed to distilled water for 2 hours at a temperature equivalent to, or higher than, the filtration temperature of the nonalcoholic, aqueous foods, yields total extractives not to exceed 4 percent, by weight, of the filter.
aqueous food, yields total extractives not to exceed 4 percent, by weight, of the filter.

(2) Conditions of use. It is used in commercial filtration of bulk quantities of nonalcoholic, aqueous foods having a pH of 5.0 or below.

(k) Resin-bonded filters conforming with the specifications of paragraph (k) (1) of this section are used as provided in paragraph (k)(2) of this section:

(1) Total extractives. The finished filter, when exposed to 8 percent (by volume) ethyl alcohol in distilled water for 2 hours at a temperature equivalent to, or higher than, the filtration temperature of the alcoholic beverage, yields total extractives not to exceed 4 percent, by weight, of the filter.

(2) Conditions of use. It is used in commercial filtration of bulk quantities of alcoholic beverages containing not more than 8 percent alcohol.

(l) Resin-bonded filters conforming with the specifications of paragraph (l) (1) of this section are used as provided in paragraph (l)(2) of this section:

(1) Total extractives. The finished filter, when exposed to 50 percent (by volume) ethyl alcohol in distilled water for 2 hours at a temperature equivalent to, or higher than, the filtration temperature of the alcoholic beverage, yields total extractives not to exceed 4 percent, by weight, of the filter.

(b) The resin may contain one or more of the following optional substances provided the quantity used does not exceed that reasonably required to accomplish the intended effect:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl glycidyl ether</td>
<td>As curing system additive</td>
</tr>
<tr>
<td>Di- and tri-glycidyl ester mixture</td>
<td>Do</td>
</tr>
<tr>
<td>1,2-Epoxy-3-phenoxyp propane</td>
<td>Do</td>
</tr>
<tr>
<td>Glyoxal</td>
<td>Do</td>
</tr>
<tr>
<td>4,4′-Isopropylidenediphenol-epichlorohydrin</td>
<td>Do</td>
</tr>
<tr>
<td>4,4′-Methylenedianiline</td>
<td>Do</td>
</tr>
<tr>
<td>m-Phenylenediamine</td>
<td>Do</td>
</tr>
<tr>
<td>Tetrahydrophthalic anhydride</td>
<td>Do</td>
</tr>
</tbody>
</table>

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

(d) The provisions of this section are not applicable to 4,4′-isopropylidenediphenol-epichlorohydrin resins listed in other sections of parts 174, 175, 176, 177, 178 and 179 of this chapter.

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