an intrinsic viscosity 1.0 to 3.2 as determined by ASTM method D1601–78, “Standard Test Method for Dilute Solution Viscosity of Ethylene 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 National 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.

(iii) Density. Poly-1-butene resins have a density of 0.904 to 0.920 gms/cm³, and butene/ethylene copolymers have a density of 0.890 to 0.916 gms/cm³ as determined by ASTM method D1505–68 (Reapproved 1979), “Standard Test Method for Density of Plastics by the Density-Gradient Technique,” which is incorporated by reference. The availability of this incorporation by reference is given in paragraph (b)(1)(ii) of this section.

(iv) Melt index. Poly-1-butene resins have a melt index of 0.1 to 24 and the butene/ethylene copolymers have a melt index of 0.1 to 20 as determined by ASTM method D1238–82, condition E, “Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer,” which is incorporated by reference. The availability of this incorporation by reference is given in paragraph (b)(1)(ii) of this section.

§ 177.1580 Polycarbonate resins.

Polycarbonate resins may be safely used as articles or components 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) Polycarbonate resins are polyesters produced by:

(1) The condensation of 4,4′-isopropylidenediphenol and carbonyl chloride to which may have been added certain optional adjuvant substances required in the production of the resins; or by

(2) The reaction of molten 4,4′-isopropylidenediphenol with molten di-phenyl carbonate in the presence of the disodium salt of 4,4′-isopropylidenediphenol.

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(b) The optional adjuvant substances required in the production of resins produced by the methods described in
paragraph (a)(1) and (3) of this section may include substances generally rec-
ognized as safe in food, substances used in accordance with a prior sanction or
approval, and the following:

<table>
<thead>
<tr>
<th>List of substances</th>
<th>Limitations</th>
</tr>
</thead>
</table>
| p-tert-Butylphenol | For use only as a chain termi-
| Chloroform | nator at a level not to ex-
| p-Cumylphenol (CAS Reg. | ceed 5 percent by weight
| No. 599–64–4) | of the resin. |
| Ethylene dichlori-
| de | Not to exceed 500 p.p.m. as
| Heptane | residual solvent in finished
| Methylene chloride. | resin. |
| Monochlorobenzene | For use only as a mold re-
| | lease agent, at a level not
to exceed 0.5 percent by
| weight of the finished resin. |
| Pentaerythritol tetrastearate (CAS Reg. | Not to exceed 800 parts per
| No. 115–83–3). | million as residual solvent
| Pyridine | |
| Triethylamine | |

(c) Polycarbonate resins shall conform to the specification prescribed in para-
graph (c)(1) of this section and shall meet the extractives limitations pre-
scribed in paragraph (c)(2) of this section.

1 Specification. Polycarbonate resins can be identified by their char-
acteristic infrared spectrum.

2 Extractives limitations. The polycarbonate resins to be tested shall be
ground or cut into small particles that will pass through a U.S. standard
sieve No. 6 and that will be held on a U.S. standard sieve No. 10.

(i) Polycarbonate resins, when ex-
tracted with distilled water at reflux
temperature for 6 hours, shall yield
total extractives not to exceed 0.15 per-
cent by weight of the resins.

(ii) Polycarbonate resins, when ex-
tracted with 50 percent (by volume)
ethyl alcohol in distilled water at
reflux temperature for 6 hours, shall
yield total extractives not to exceed
0.15 percent by weight of the resins.

(iii) Polycarbonate resins, when ex-
tracted with n-heptane at reflux tem-
perature for 6 hours, shall yield total
extractives not to exceed 0.15 percent by weight of the resins.