Food and Drug Administration, HHS

§ 172.892 Food starch-modified.

Food starch-modified as described in this section may be safely used in food. The quantity of any substance employed to effect such modification shall not exceed the amount reasonably required to accomplish the intended physical or technical effect, nor exceed any limitation prescribed. To insure safe use of the food starch-modified, the label of the food additive container shall bear the name of the additive “food starch-modified” in addition to other information required by the Act. Food starch may be modified by treatment prescribed as follows:

(a) Food starch may be acid-modified by treatment with hydrochloric acid or sulfuric acid or both.

(b) Food starch may be bleached by treatment with one or more of the following:

<table>
<thead>
<tr>
<th>Food</th>
<th>Limitation in food</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candy</td>
<td>50 p.p.m</td>
<td>Coating.</td>
</tr>
<tr>
<td>Fresh fruits and fresh vegetables</td>
<td>do</td>
<td>Do.</td>
</tr>
<tr>
<td>Chewing gum</td>
<td>2 1⁄2 pct</td>
<td>Plasticizing material.</td>
</tr>
</tbody>
</table>

§ 172.890 Rice bran wax.

Rice bran wax may be safely used in food in accordance with the following conditions:

(a) It is the refined wax obtained from rice bran and meets the following specifications:

- Melting point 75 °C to 80 °C.
- Free fatty acids, maximum 10 percent.
- Iodine number, maximum 20.
- Saponification number 75 to 120.

(b) It is used or intended for use as follows:

<table>
<thead>
<tr>
<th>Food</th>
<th>Limitation in food</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candy</td>
<td>50 p.p.m</td>
<td>Coating.</td>
</tr>
<tr>
<td>Fresh fruits and fresh vegetables</td>
<td>do</td>
<td>Do.</td>
</tr>
<tr>
<td>Chewing gum</td>
<td>2 1⁄2 pct</td>
<td>Plasticizing material.</td>
</tr>
</tbody>
</table>

§ 172.888 Synthetic petroleum wax.

Synthetic petroleum wax may be safely used in or on foods in accordance with the following conditions:

(a) Synthetic petroleum wax is a mixture of solid hydrocarbons, paraffinic in nature, prepared by either catalytic polymerization of ethylene or copolymerization of ethylene with linear (C3 to C12) alpha-olefins, and refined to meet the specifications prescribed in this section.

(b) Synthetic petroleum wax meets the ultraviolet absorbance limits of § 172.340 when subjected to the analytical procedure described therein.

(c) Synthetic petroleum wax has a number average molecular weight of not less than 500 nor greater than 1,200 as determined by vapor pressure osmometry.

(d) Synthetic petroleum wax may contain any antioxidant permitted in food by regulations issued in accordance with section 409 of the act, in an amount not greater than that required to produce its intended effect.

(e) Synthetic petroleum wax is used or intended for use as follows:

<table>
<thead>
<tr>
<th>Use</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>In chewing gum base, as a masticatory substance.</td>
<td>In accordance with § 172.615 in an amount not to exceed good manufacturing practice.</td>
</tr>
</tbody>
</table>

[42 FR 14491, Mar. 15, 1977, as amended at 59 FR 10886, Mar. 9, 1994]
§ 172.892

Food starch—modifications and treatments

Limitations

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium persulfate, not to exceed 0.075 percent and sulfur dioxide, not to exceed 0.05 percent.</td>
<td>The finished food starch-modified is limited to use only as a component of batter for commercially processed foods.</td>
</tr>
<tr>
<td>Chlorine, as calcium hypochlorite, not to exceed 0.036 percent of dry starch.</td>
<td>Do.</td>
</tr>
<tr>
<td>Chlorine, as sodium hypochlorite, not to exceed 0.0082 pound of chlorine per pound of dry starch.</td>
<td>Do.</td>
</tr>
<tr>
<td>Potassium permanganate, not to exceed 0.2 percent.</td>
<td>Do.</td>
</tr>
<tr>
<td>Sodium chlorite, not to exceed 0.5 percent.</td>
<td>Do.</td>
</tr>
</tbody>
</table>

(c) Food starch may be oxidized by treatment with chlorine, as sodium hypochlorite, not to exceed 0.055 pound of chlorine per pound of dry starch.

(d) Food starch may be esterified by treatment with one of the following:

- Acetic anhydride
- Adipic anhydride, not to exceed 0.12 percent, and acetic anhydride.
- Monosodium orthophosphate
- 1-Octenyl succinic anhydride, not to exceed 3 percent.
- 1-Octenyl succinic anhydride, not to exceed 2 percent, and aluminum sulfate, not to exceed 2 percent.
- 1-Octenyl succinic anhydride, not to exceed 0.1 percent, followed by treatment with a beta-amylase enzyme that is either an approved food additive or generally recognized as safe.
- Phosphorus oxychloride, not to exceed 0.1 percent.
- Phosphorus oxychloride, not to exceed 0.1 percent, followed by either acetic anhydride, not to exceed 8 percent, or vinyl acetate, not to exceed 7.5 percent.
- Sodium trimetaphosphate
- Sodium tripolyphosphate and sodium trimetaphosphate.
- Succinic anhydride, not to exceed 4 percent.

(e) Food starch may be etherified by treatment with one of the following:

- Epichlorohydrin, not to exceed 0.3 percent.
- Propylene oxide, not to exceed 0.1 percent, and propylene oxide, not to exceed 25 percent.
- Epichlorohydrin, not to exceed 0.1 percent, followed by propylene oxide, not to exceed 2.5 percent.
- Phosphorus oxychloride, not to exceed 0.4 percent, and succinic anhydride, not to exceed 4 percent.
- Epichlorohydrin, not to exceed 0.1 percent, and propylene oxide, not to exceed 2.5 percent.
- Phosphorus oxychloride, not to exceed 0.4 percent, and acetic anhydride.
- Propylene oxide, not to exceed 25 percent.
- Acrolein, not to exceed 0.6 percent.
- Acetyl groups in food starch-modified not to exceed 2.5 percent.
- Residual propylene chlorohydrin not more than 5 parts per million in food starch-modified.
- Do.
- Do.

(f) Food starch may be esterified and etherified by treatment with one of the following:

- Acrolein, not to exceed 0.6 percent.
- Acetyl groups in food starch-modified not to exceed 2.5 percent.
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- Residual propylene chlorohydrin not more than 5 parts per million in food starch-modified.

(g) Food starch may be modified by treatment with one of the following:

- Chlorine, as sodium hypochlorite, not to exceed 0.055 pound of chlorine per pound of dry starch; 0.45 percent of active oxygen obtained from hydrogen peroxide; and propylene oxide, not to exceed 25 percent.
- Sodium hydroxide, not to exceed 1 percent.
- Residual propylene chlorohydrin not more than 5 parts per million in food starch-modified.

(h) Food starch may be modified by a combination of the treatments prescribed by paragraphs (a), (b), and/or (i) of this section and any one of the treatments prescribed by paragraph (c), (d), (e), (f), or (g) of this section, subject to any limitations prescribed by the paragraphs named.
Food and Drug Administration, HHS

§ 172.898

(i) Food starch may be modified by treatment with the following enzymes:

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha-amylase (E.C. 3.2.1.1)</td>
<td>The enzyme must be generally recognized as safe or approved as a food additive for this purpose. The resulting nonsweet nutritive saccharide polymer has a dextrose equivalent of less than 20.</td>
</tr>
<tr>
<td>Beta-amylase (E.C. 3.2.1.2)</td>
<td></td>
</tr>
<tr>
<td>Glucoamylase (E.C. 3.2.1.3)</td>
<td></td>
</tr>
<tr>
<td>Isoamylase (E.C. 3.2.1.68)</td>
<td></td>
</tr>
<tr>
<td>Pullulanase (E.C. 3.2.1.41)</td>
<td></td>
</tr>
</tbody>
</table>


§ 172.894 Modified cottonseed products intended for human consumption.

The food additive modified cottonseed products may be used for human consumption in accordance with the following prescribed conditions:

(a) The additive is derived from:
   (1) Decorticated, partially defatted, cooked, ground cottonseed kernels; or
   (2) Decorticated, ground cottonseed kernels, in a process that utilizes n-hexane as an extracting solvent in such a way that no more than 60 parts per million of n-hexane residues and less than 1 percent fat by weight remain in the finished product; or
   (3) Glandless cottonseed kernels roasted to attain a temperature of not less than 250 °F in the kernel for not less than 5 minutes for use as a snack food, or in baked goods, or in soft candy; or
   (4) Raw glandless cottonseed kernels may be used in hard candy where the kernel temperature during cooking will exceed 250 °F for not less than 5 minutes.

(b) The additive is prepared to meet the following specifications:
   (1) Free gossypol content not to exceed 450 parts per million.
   (2) It contains no added arsenic compound and therefore may not exceed a maximum natural background level of 0.2 part per million total arsenic, calculated as As.
   (c) To assure safe use of the additive, the label of the food additive container shall bear, in addition to other information required by the act, the name of the additive as follows:
      (1) The additive identified in paragraph (a)(1) of this section as “partially defatted, cooked cottonseed flour”.
      (2) The additive identified in paragraph (a)(2) of this section as “defatted cottonseed flour”.
      (3) The additive identified in paragraph (a)(3) of this section as “roasted glandless cottonseed kernels”.
      (4) The additive identified in paragraph (a)(4) of this section as “raw glandless cottonseed kernels for use in cooked hard candy”.

(d) The Food and Drug Administration and the Environmental Protection Agency have determined that glandless cottonseed kernels permitted for use by this section are a distinct commodity from glanded cottonseed.

§ 172.896 Dried yeasts.

Dried yeast (Saccharomyces cerevisiae and Saccharomyces fragilis) and dried torula yeast (Candida utilis) may be safely used in food provided the total folic acid content of the yeast does not exceed 0.04 milligram per gram of yeast (approximately 0.008 milligram of pteroyglutamic acid per gram of yeast).

§ 172.898 Bakers yeast glycan.

Bakers yeast glycan may be safely used in food in accordance with the following conditions:

(a) Bakers yeast glycan is the comminuted, washed, pasteurized, and dried cell walls of the yeast, Saccharomyces cerevisiae. It is composed principally of long chain carbohydrates, not less than 85 percent on a dry solids basis. The carbohydrate is composed of glycan and mannan units in approximately a 2:1 ratio.

(b) The additive meets the following specifications on a dry weight basis:
   (1) Less than 0.4 part per million (ppm) arsenic, 0.13 ppm cadmium, 0.2 ppm lead, 0.05 ppm mercury, 0.09 ppm selenium, and 10 ppm zinc.
   (c) The viable microbial content of the finished ingredient is:
      (1) Less than 10,000 organisms/gram by aerobic plate count.
      (2) Less than 10 yeasts and molds/gram.