

The Food and Drug Administration will exempt substances whose uses it determines meet the criteria in §170.39 of this chapter from regulation as food additives and, therefore, a food additive petition will not be required for the exempted use.

[60 FR 36596, July 17, 1995]

PART 175—INDIRECT FOOD ADDITIVES: ADHESIVES AND COMPONENTS OF COATINGS

Subpart A [Reserved]

Subpart B—Substances for Use Only as Components of Adhesives

Sec.

175.105 Adhesives.

175.125 Pressure-sensitive adhesives.

Subpart C—Substances for Use as Components of Coatings

175.210 Acrylate ester copolymer coating.

175.230 Hot-melt strippable food coatings.

175.250 Paraffin (synthetic).

175.260 Partial phosphoric acid esters of polyester resins.

175.270 Poly(vinyl fluoride) resins.

175.300 Resinous and polymeric coatings.

175.320 Resinous and polymeric coatings for polyolefin films.

175.350 Vinyl acetate/crotonic acid copolymer.

175.360 Vinylidene chloride copolymer coatings for nylon film.

175.365 Vinylidene chloride copolymer coatings for polycarbonate film.

175.380 Xylene-formaldehyde resins condensed with 4,4'-isopropylidenediphenol-epichlorohydrin epoxy resins.

175.390 Zinc-silicon dioxide matrix coatings.

AUTHORITY: 21 U.S.C. 321, 342, 348, 379e.

SOURCE: 42 FR 14534, Mar. 15, 1977, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 175 appear at 61 FR 14482, Apr. 2, 1996, 66 FR 56035, Nov. 6, 2001, and 70 FR 72074, Dec. 1, 2005.

Subpart A [Reserved]

Subpart B—Substances for Use Only as Components of Adhesives

§ 175.105 Adhesives.

(a) Adhesives may be safely used as components of articles intended for use in packaging, transporting, or holding

food in accordance with the following prescribed conditions:

(1) The adhesive is prepared from one or more of the optional substances named in paragraph (c) of this section, subject to any prescribed limitations.

(2) The adhesive is either separated from the food by a functional barrier or used subject to the following additional limitations:

(i) *In dry foods.* The quantity of adhesive that contacts packaged dry food shall not exceed the limits of good manufacturing practice.

(ii) *In fatty and aqueous foods.* (a) The quantity of adhesive that contacts packaged fatty and aqueous foods shall not exceed the trace amount at seams and at the edge exposure between packaging laminates that may occur within the limits of good manufacturing practice.

(b) Under normal conditions of use the packaging seams or laminates will remain firmly bonded without visible separation.

(b) To assure safe usage of adhesives, the label of the finished adhesive container shall bear the statement “food-packaging adhesive”.

(c) Subject to any limitation prescribed in this section and in any other regulation promulgated under section 409 of the Act which prescribes safe conditions of use for substances that may be employed as constituents of adhesives, the optional substances used in the formulation of adhesives may include the following:

(1) Substances generally recognized as safe for use in food or food packaging.

(2) Substances permitted for use in adhesives by prior sanction or approval and employed under the specific conditions of use prescribed by such sanction or approval.

(3) Flavoring substances permitted for use in food by regulations in this part, provided that such flavoring substances are volatilized from the adhesives during the packaging fabrication process.

(4) Color additives approved for use in food.

(5) Substances permitted for use in adhesives by other regulations in this subchapter and substances named in this subparagraph: *Provided, however,*

§ 175.105

That any substance named in this paragraph and covered by a specific regulation in this subchapter, must meet any specifications in such regulation.

Substances	Limitations
Abietic acid.	
Acetone.	
Acetone-formaldehyde condensate (CAS Reg. No. 25619-09-4).	
Acetone-urea-formaldehyde resin.	
N-Acetyl ethanolamine.	
Acetyl tributyl citrate.	
Acetyl triethyl citrate.	
2-Acrylamido-2-methyl-propanesulfonic acid, homopolymer, sodium salt (CAS Reg. No. 35641-59-9).	
Albumin, blood.	
(2-Alkenyl) succinic anhydrides in which the alkenyl groups are derived from olefins which contain not less than 78 percent C ₃₀ and higher groups (CAS Reg. No. 70983-55-0).	
4-[2-[2-2-(Alkoxy (C ₁₂ -C ₁₅) ethoxy) ethoxy]ethyl] disodium sulfosuccinate.	
1-Alkyl (C ₆ -C ₁₈) amino-3-amino-propane monoacetate.	
Alkylated (C ₄ and/or C ₈) phenols.	
Alkyl (C ₇ -C ₁₂) benzene.	
Alkyl (C ₁₀ -C ₂₀) dimethylbenzyl ammonium chloride.	
n-Alkyl(C ₁₂ , C ₁₄ , C ₁₆ , or C ₁₈) dimethyl (ethylbenzyl) ammonium cyclohexylsulfamate.	For use as preservative only.
Alkyl ketene dimers as described in § 176.120 of this chapter.	
Alkyl (C ₇ -C ₁₂) naphthalene.	
alpha Olefin sulfonate [alkyl group is in the range of C ₁₀ -C ₁₈ with not less than 50 percent C ₁₄ -C ₁₆], ammonium, calcium, magnesium, potassium, and sodium salts.	
2-[(2-aminoethyl)amino]ethanol (CAS Reg. No. 111-41-1).	
3-Aminopropanediol	For use only in the preparation of polyurethane resins.
Aluminum.	
Aluminum acetate.	
Aluminum di(2-ethylhexoate).	
Aluminum potassium silicate.	
N-β-Aminoethyl-γ-aminopropyl trimethoxysilane.	
3-(Aminomethyl)-3,5,5-trimethylcyclohexylamine.	
Aminomethylpropanol.	
Ammonium benzoate	For use as preservative only.
Ammonium bifluoride	For use only as bonding agent for aluminum foil, stabilizer or preservative. Total fluoride from all sources not to exceed 1 percent by weight of the finished adhesive.
Ammonium borate.	
Ammonium citrate.	
Ammonium persulfate.	
Ammonium polyacrylate.	
Ammonium potassium hydrogen phosphate.	
Ammonium silico-fluoride	For use only as bonding agent for aluminum foil, stabilizer, or preservative. Total fluoride from all sources not to exceed 1 percent by weight of the finished adhesive.
Ammonium sulfamate.	
Ammonium thiocyanate.	
Ammonium thiosulfate.	
Amyl acetate.	
Anhydroenneaheptitol.	
Animal glue as described in § 178.3120 of this chapter.	
2-Anthraquinone sulfonic acid, sodium salt	For use only as polymerization-control agent.
Antimony oxide.	
Asbestos.	
Asphalt, paraffinic and naphthenic.	
Azelaic acid.	
Azo-bis-isobutyronitrile.	
Balata rubber.	
Barium acetate.	
Barium peroxide.	
Barium sulfate.	
Bentonite.	
Benzene (benzol).	
1,4-Benzenedicarboxylic acid, bis[2-(1,1-dimethylethyl)-6-[(3-(1,1-dimethylethyl)-2-hydroxy-5-methylphenyl)methyl]-4-methyl-phenyl]ester (CAS Reg. No. 57569-40-1).	For use as a stabilizer.

Substances	Limitations
1,2-Benzisothiazolin-3-one (CAS Registry No. 2634–33–5)	For use as preservative only.
Benzothiazyl disulfide.	
<i>p</i> -Benzoxyphenol	For use as preservative only.
Benzoyl peroxide.	
Benzyl alcohol.	
Benzyl benzoate.	
Benzyl bromoacetate	For use as preservative only.
<i>p</i> -Benzyloxyphenol	Do.
BHA (butylated hydroxyanisole).	
BHT (butylated hydroxytoluene).	
Bicyclo[2.2.1]hept-2-ene-6-methyl acrylate.	
2-Biphenyl diphenyl phosphate.	
Bis(benzoate- <i>O</i>)(2-propanolato)aluminum (CAS Reg. No. 105442–85–1)	For use only as a reactant in the preparation of poly- ester resins.
1,2-Bis(3,5-di- <i>tert</i> -butyl-4-hydroxyhydrocinnamoyl)hydrazine (CAS Reg. No. 32687–78–8).	For use at a level not to exceed 2 percent by weight of the adhesive.
1,3-Bis(2-benzothiazolylmercaptomethyl) urea.	
4,4'-Bis(α,α -dimethylbenzyl)diphenylamine.	
2,6-Bis(1,1-dimethylethyl)-4-(1-methylpropyl)phenol (CAS Reg. No. 17540–75–9).	For use as an antioxidant and/or stabilizer only.
2,6-Bis (1-methylheptadecyl)- <i>p</i> -cresol.	
4-[[4, 6-Bis(octylthio)6-Bis(octylthio)6-Bis(octylthio)- <i>s</i> -triazin-2-yl]amino]-2,6-di- <i>tert</i> -butylphenol (CAS Reg. No. 991–84–4).	
Bis(tri- <i>n</i> -butyltin) oxide	For use as preservative only.
Bis(trichloromethyl)sulfone C.A. Registry No. 3064–70–8	Do.
Borax.	
Boric acid.	
2-Bromo-2-nitro-1, 3-propanediol (CAS Reg. No. 52–51–7)	For use only as an antibacterial preservative.
Butanedioic acid, sulfo-1,4-di-(C ₈ -C ₁₁ alkyl) ester, ammonium salt (also known as butanedioic acid, sulfo-1,4-diisodecyl ester, ammonium salt [CAS Reg. No. 144093–88–9])..	For use as a surface active agent in adhesives.
1,3-Butanediol.	
1,4-Butanediol.	
1,4-Butanediol modified with adipic acid.	
Butoxy polyethylene polypropylene glycol (molecular weight 900–4,200).	
Butyl acetate.	
Butyl acetyl ricinoleate.	
Butyl alcohol.	
Butylated reaction product of <i>p</i> -cresol and dicyclopentadiene	As identified in § 178.2010(b) of this chapter.
Butylated, styrenated cresols identified in § 178.2010(b) of this chapter.	
Butyl benzoate.	
Butyl benzyl phthalate.	
Butyldecyl phthalate	
1,3-Butylene glycoldiglycolic acid copolymer.	
<i>tert</i> -Butyl hydroperoxide.	
4,4'-Butylidenebis(6- <i>tert</i> -butyl- <i>m</i> -cresol).	
Butyl lactate.	
Butyloctyl phthalate.	
<i>p</i> - <i>tert</i> -Butylphenyl salicylate.	
Butyl phthalate butyl glycolate.	
<i>p</i> - <i>tert</i> -Butylpyrocatechol	For use only as polymerization-control agent.
Butyl ricinoleate.	
Butyl rubber polymer.	
Butyl stearate.	
Butyl titanate, polymerized.	
Butyraldehyde.	
Calcium ethyl acetoacetate.	
Calcium nitrate.	
Calcium metasilicate.	
Camphor.	
Camphor fatty acid esters.	
Candelilla wax.	
<i>epsilon</i> -Caprolactam-(ethylene-ethyl acrylate) graft polymer.	
Carbon black, channel process.	
Carbon disulfide-1,1'-methylenedipiperidine reaction product.	
Carbon tetrachloride.	
Carboxymethylcellulose.	
Castor oil, polyoxyethylated (4–84 moles ethylene oxide).	
Cellulose acetate butyrate.	
Cellulose acetate propionate.	
Ceresin wax (ozocerite).	
Cetyl alcohol.	
Chloracetamide.	
Chloral hydrate.	

Substances	Limitations
Chlorinated liquid <i>n</i> -paraffins with chain lengths of C ₁₀ -C ₁₇ , containing 40–70 percent chlorine by weight.	
Chlorinated pyridine mixture with active ingredients consisting of 2,3,5,6-tetrachloro-4-(methylsulfonyl) pyridine, 2,3,5,6-tetrachloro-4-(methylsulfinyl) pyridine and pentachloropyridine.	For use as preservative only.
Chlorinated rubber polymer (natural rubber polymer containing approximately 67 percent chlorine).	
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	For use as preservative only.
Chlorobenzene.	
4-Chloro-3,5-dimethylphenol (<i>p</i> -chloro- <i>m</i> -xylene)	For use as preservative only.
4-Chloro-3-methylphenol	Do.
5-Chloro-2-methyl-4-isothiazolin-3-one (CAS Reg. No. 26172–55–4) and 2-methyl-4-isothiazolin-3-one (CAS Reg. No. 2682–20–4) mixture at a ratio of 3 parts to 1 part, manufactured from methyl-3-mercaptopropionate (CAS Reg. No. 2935–90–2). The mixture may contain magnesium nitrate (CAS Reg. No. 10377–60–3) at a concentration equivalent to the isothiazolone active ingredients (weight/weight).	For use only as an antimicrobial agent in polymer latex emulsions.
Chloroform.	
Chloroprene.	
Chromium caseinate.	
Chromium nitrate.	
Chromium potassium sulfate.	
Cobaltous acetate.	
Coconut fatty acid amine salt of tetrachlorophenol	For use as preservative only.
Copal.	
Copper 8-quinolinolate	For use as preservative only.
Coumarone-indene resin.	
Cresyl diphenyl phosphate.	
Cumene hydroperoxide.	
Cyanoguanidine.	
Cyclized rubber as identified in § 176.170(b)(2) of this chapter.	
Cyclohexane.	
1,4-Cyclohexanedimethanoldibenzoate (CAS Reg. No. 35541–81–2).	
Cyclohexanol.	
Cyclohexanone resin.	
Cyclohexanone-formaldehyde condensate.	
<i>N</i> -Cyclohexyl <i>p</i> -toluene sulfonamide.	
(η^5 -Cyclopentadienyl)-(η^6 -isopropylbenzene)iron(II) hexafluorophosphate (CAS Reg. No. 32760–80–8).	For use only as a photoinitiator.
Damar.	
Defoaming agents as described in § 176.210 of this chapter.	
Dehydroacetic acid	
Diacetone alcohol.	
Diacetyl peroxide.	
<i>N,N'</i> -Dialkoyl-4,4'-diaminodiphenylmethane mixtures where; the alkoyl groups are derived from marine fatty acids (C ₁₂ -C ₂₄).	
2,5-Di- <i>tert</i> -amylhydroquinone.	
Diamines derived from dimerized vegetable oil acids.	
Diaryl- <i>p</i> -phenylenediamine, where the aryl group may be phenyl, tolyl, or xylol.	
1,2-Dibromo-2,4-dicyanobutane (CAS Registry No. 3569–65–7)	For use as a preservative only.
2,2-Dibromo-3-nitrilopropionamide (CAS Reg. No. 10222–01–2).	For use as a preservative only.
Di(butoxyethyl) phthalate.	
2,5-Di- <i>tert</i> -butylhydroquinone.	
Dibutyl maleate.	
2,6-Di- <i>tert</i> -butyl-4-methylphenol	For use as preservative only.
Di(C ₇ , C ₉ -alkyl)adipate.	
Dibutyl phthalate.	
Dibutyl sebacate.	
Dibutyltin dilaurate for use only as a catalyst for polyurethane resins.	
1,2-Dichloroethylene (mixed isomers).	
Dicumyl peroxide.	
Dicyclohexyl phthalate.	
Diethanolamine.	
Diethanolamine condensed with animal or vegetable fatty acids.	
Diethylamine.	
Diethylene glycol.	
Diethylene glycol adipic acid copolymer.	
Diethylene glycol dibenzoate.	
Diethylene glycol hydrogenated tallowate monoester.	
Diethylene glycol laurate.	
Diethylene glycol monobutyl ether.	
Diethylene glycol monobutyl ether acetate.	

§ 175.105

21 CFR Ch. I (4-1-11 Edition)

Substances	Limitations
Diethylene glycol monoethyl ether. Diethylene glycol monoethyl ether acetate. Diethylene glycol monomethyl ether. Diethylene glycol monooleate. Diethylene glycol monophenyl ether. Diethylene glycol copolymer of adipic acid and phthalic anhydride. Di(2-ethylhexyl) adipate. Di(2-ethylhexyl) hexahydrophthalate. Di(2-ethylhexyl) phthalate. Diethyl oxalate. Diethyl phthalate. Dihexyl phthalate. Dihydroabietylphthalate. Di(2-hydroxy-5- <i>tert</i> -butylphenyl) sulfide. 2,2'-Dihydroxy-5,5'-dichlorodiphenylmethane (dichlorophene). 4,5-Dihydroxy-2-imidazolidinone. 4-(Diiodomethylsulfonyl) toluene CA Registry No.: 20018–09–01 Diisobutyl adipate. Diisobutyl ketone. Diisobutylphenoxyethoxyethyl dimethyl benzyl ammonium chloride. Diisobutyl phthalate. Diisodecyl adipate. Diisodecyl phthalate. Diisoctyl phthalate. Diisopropylbenzene hydroperoxide. <i>N,N</i> -Dimethylcyclohexylamine dibutyldithiocarbamate. Dimethyl formamide. Dimethyl hexynol. 2,2-Dimethyl-1,3-propanediol dibenzoate. Dimethyl octylenediol. <i>N</i> -(1,1-dimethyl-3-oxobutyl) acrylamide. Dimethyl phthalate. 3,5-Dimethyl-1,3,5,2 <i>H</i> -tetrahydrothiadiazine-2-thione Di-β-naphthyl- <i>p</i> -phenylenediamine. 4,6-Dinonyl- <i>o</i> -cresol. Dinonylphenol. Di- <i>n</i> -octyldecyl adipate. Dioctyldiphenylamine. Dioctylphthalate. Dioctylsebacate. Dioxane. Dipentaerythritol pentastearate. Dipentamethylene-thiuram-tetrasulfide. Dipentene Dipentene resins. Dipentene- <i>beta</i> -pinene-styrene resins. Dipentene-styrene resin (CAS Registry No. 64536–06–7). Diphenyl-2-ethylhexyl phosphate. Diphenyl, hydrogen ated. <i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine. Diphenyl phthalate. 1,3-Diphenyl-2-thiourea. Dipropylene glycol. Dipropylene glycol dibenzoate. Dipropylene glycol monomethyl ether. Dipropylene glycol copolymer of adipic acid and phthalic anhydride. Disodium cyanodithioimidocarbonate. Disodium 4-isodecyl sulfosuccinate (CAS Reg. No. 37294–49–8). <i>N,N'</i> -Distearoylethylenediamine. Distearyl thioldipropionate. 3,5-Di- <i>tert</i> -butyl-4-hydroxyhydrocinamic acid triester with 1,3,5-tris(2-hydroxyethyl)- <i>s</i> -triazine-2,4,6(1 <i>H</i> , 3 <i>H</i> , 5 <i>H</i>)-trione. 4,4'-Dithiodimorpholine. <i>n</i> -Dodecylmercaptan. <i>tert</i> -Dodecylmercaptan. Dodecylphenoxybenzene-disulfonic acid and/or its calcium, magnesium, and sodium salts. Elemi gum. Epichlorohydrin-4,4'-isopropylidenediphenol resin. Epichlorohydrin-4,4'- <i>sec</i> -butylidenediphenol resin. Epichlorohydrin-4,4'-isopropylidene-di- <i>o</i> -cresol resin. Epichlorohydrin-phenolformaldehyde resin. Erucamide (erucylamide). Ethanolamine.	For use as an antifungal preservative only.
	For use as preservative only.
	For use as antioxidant only.

Substances	Limitations
<p>Ethoxylated primary linear alcohols of greater than 10 percent ethylene oxide by weight having molecular weights of 390 to 7,000 (CAS Reg. No. 97953–22–5).</p> <p>Ethoxypropanol butyl ether.</p> <p>Ethyl alcohol (ethanol).</p> <p>5-Ethyl-1,3-diglycidyl-5-methylhydantoin (CAS Reg. No. 15336–82–0).</p> <p>Ethylene-acrylic acid-carbon monoxide copolymer (CAS Reg. No. 97756–27–9).</p> <p>Ethylene-acrylic acid copolymer, partial sodium salt containing no more than 20 percent acrylic acid by weight, and no more than 16 percent of the acrylic acid as the sodium salt (CAS Reg. No. 25750–82–7).</p> <p>Ethylenediamine.</p> <p>Ethylenediaminetetra-acetic acid, calcium, ferric, potassium, or sodium salts, single or mixed.</p> <p>Ethylene dichloride.</p> <p>Ethylene glycol.</p> <p>Ethylene glycol monobutyl ether.</p> <p>Ethylene glycol monobutyl ether acetate.</p> <p>Ethylene glycol monoethyl ether.</p> <p>Ethylene glycol monoethyl ether acetate.</p> <p>Ethylene glycol monoethyl ether ricinoleate.</p> <p>Ethylene glycol monomethyl ether.</p> <p>Ethylene glycol monophenyl ether.</p> <p>Ethylene-carbon monoxide copolymer (CAS Reg. No. 25052–62–4) containing not more than 30 weight percent of the units derived from carbon monoxide.</p> <p>Ethylene-maleic anhydride copolymer, ammonium or potassium salt.</p> <p>Ethylene-methacrylic acid copolymer partial salts: Ammonium, calcium, magnesium, sodium, and/or zinc.</p> <p>Ethylene-methacrylic acid-vinyl acetate copolymer partial salts: Ammonium, calcium, magnesium, sodium, and/or zinc.</p> <p>Ethylene-octene-1 copolymers containing not less than 70 weight percent ethylene (CAS Reg. No. 26221–73–8).</p> <p>Ethylene-propylene-dicyclopentadiene copolymer rubber.</p> <p>Ethylene, propylene, 1,4-hexadiene and 2,5-norbornadiene tetrapolymer.</p> <p>Ethylene-vinyl acetate carbon monoxide terpolymer (CAS Registry No. 26337–35–9) containing not more than 15 weight percent of units derived from carbon monoxide.</p> <p>2,2'-Ethyldenebis (4,6-di-<i>tert</i>-butylphenol) (CAS Reg. No. 35958–30–6).</p> <p>Ethyl-<i>p</i>-hydroxybenzoate</p> <p>Ethyl hydroxyethylcellulose.</p> <p>Ethyl lactate.</p> <p>2,2'-Ethyldenebis(4,6-di-<i>tert</i>-butylphenyl)fluorophosphonite (CAS Reg. No. 118337–09–0).</p> <p>Ethyl phthalyl ethyl glycolate.</p> <p>Ethyl-<i>p</i>-toluene sulfonamide</p> <p>Fats and oils derived from animal or vegetable sources, and the hydrogenated, sulfated, or sulfonated forms of such fats and oils.</p> <p>Fatty acids derived from animal or vegetable fats and oils; and salts of such acids, single or mixed, as follows:</p> <p>Aluminum.</p> <p>Ammonium.</p> <p>Calcium.</p> <p>Magnesium.</p> <p>Potassium.</p> <p>Sodium.</p> <p>Zinc.</p> <p>Ferric chloride.</p> <p>Fluosilicic acid (hydrofluosilicic acid)</p> <p>Formaldehyde.</p> <p>Formaldehyde <i>o</i>- and <i>p</i>-toluene sulfonamide.</p> <p>Formamide.</p> <p>Fumaratochromium (III) nitrate.</p> <p>Furfural.</p> <p>Furfuryl alcohol.</p> <p>Fumaric acid.</p> <p><i>gamma</i>-Aminopropyltrimethoxysilane (CAS Reg. No. 13822–56–5).</p> <p>Glutaraldehyde.</p> <p>Glycerides, di- and monoesters.</p> <p>Glycerol polyoxypropylene triol, minimum average molecular weight 250 (CAS Reg. No. 25791–96–2).</p>	<p>For use as preservative only.</p> <p>For use as an antioxidant and/or stabilizer only.</p> <p>For use only as bonding agent for aluminum foil, stabilizer, or preservative. Total fluoride from all sources not to exceed 1 percent by weight of the finished adhesive.</p> <p>For use only in the preparation of polyester and polyurethane resins in adhesives.</p>

Substances	Limitations
<p>Glyceryl borate (glycol boriborate resin). Glyceryl ester of damar, copal, elemi, and sandarac. Glyceryl monobutyl ricinoleate. Glyceryl monohydroxy stearate. Glyceryl monohydroxy tallowate. Glyceryl polyoxypropylene triol (average molecular weight 1,000). Glyceryl tribenzoate. Glycol diacetate. Glyoxal. Heptane. Hexamethylenetetramine. Hexane. Hexanetriols. Hexylene glycol. Hydroabietyl alcohol. Hydrocarbon resins (produced by polymerization of mixtures of mono- and di-unsaturated hydrocarbons of the aliphatic, alicyclic, and monobenzenoid type derived both from cracked petroleum and terpene stocks) (CAS Reg. No. 68239–99–6). Hydrocarbon resins (produced by the polymerization of styrene and <i>alpha</i>-methyl styrene), hydrogenated (CAS Reg. No. 68441–37–2). Hydrofluoric acid</p>	<p>For use only as bonding agent for aluminum foil, stabilizer, or preservative. Total fluoride from all sources not to exceed 1 percent by weight of the finished adhesive.</p>
<p>Hydrogen peroxide. Hydrogenated dipentene resin (CAS Reg. No. 106168–39–2). Hydrogenated dipentene-styrene copolymer resin (CAS Reg. No. 106168–36–9). Hydrogenated-<i>beta</i>-pinene-<i>alpha</i>-pinene-dipentene copolymer resin (CAS Reg. No. 106168–37–0). <i>a</i>-Hydro-<i>omega</i>-hydroxypoly-(oxytetramethylene)</p>	<p>For use only in the preparation of polyurethane resins.</p>
<p>Hydroquinone. Hydroquinone monobenzyl ether. Hydroquinone monoethyl ether. 2-(2'-Hydroxy-3',5' di-<i>tert</i>-amylphenyl) benzotriazole. Hydroxyacetic acid. 7-Hydroxycoumarin. Hydroxyethylcellulose. 2-Hydroxy-1-[4-(2-hydroxyethoxy)phenyl]-2-methyl-1-propanone(CAS Reg. No. 106797–53–9). 1-(2-Hydroxyethyl)-1-(4-chlorobutyl)-2 alkyl (C₆-C₁₇) imidazolinium chloride. Hydroxyethyldiethylenetriamine. β-Hydroxyethyl pyridinium 2-mercaptobenzothiazol. Hydroxyethyl starch. Hydroxyethylurea Hydroxylamine sulfate. 5-Hydroxymethoxymethyl-1-aza-3,7-dioxabicyclo[3.3.0]octane, 5-hydroxymethyl-1-aza-3,7-dioxabicyclo[3.3.0]octane, and 5-hydroxypoly-[methyleneoxy]methyl-1-aza-3,7-dioxabicyclo[3.3.0] octane mixture. Hydroxypropyl methylcellulose. 2-(Hydroxymethyl)-2-methyl-1,3-propanediol tribenzoate. 2-Imidazolidinone. 3-Iodo-2-propynyl-N-butyl carbamate (CAS Reg. No. 55406–53–6) Iodoform Isoascorbic acid. Isobutyl alcohol (isobutanol). Isobutylene-isoprene copolymer. Isodecyl benzoate (CAS Reg. No. 131298–44–7). Isophorone. Isopropanolamine (mono-, di-, tri-). Isopropyl acetate. Isopropyl alcohol (isopropanol). Isopropyl-<i>m</i>- and <i>p</i>-cresol (thymol derived). 4,4'-Isopropylidenediphenol. 4,4'-Isopropylidenediphenol, polybutylated mixture Isopropyl peroxydicarbonate. <i>p</i>-Isopropoxy diphenylamine. 4,4'-Isopropylidene-bis(<i>p</i>-phenyleneoxy)-di-2-propanol. Itaconic acid. Japan wax. Kerosene.</p>	<p>For use only as a photoinitiator at a level not to exceed 5 percent by weight of the adhesive.</p> <p>For use only as an antibacterial preservative.</p> <p>For use only as an antifungal preservative. For use only as polymerization-control agent.</p> <p>For use as preservative only.</p>

Food and Drug Administration, HHS

§ 175.105

Substances	Limitations
<p>Lauroyl peroxide.</p> <p>Lauroyl sulfate salts:</p> <p>Ammonium.</p> <p>Magnesium.</p> <p>Potassium.</p> <p>Sodium.</p> <p>Lauryl alcohol.</p> <p>Lauryl pyridinium 5-chloro-2-mercaptobenzothiazole.</p> <p>Lignin calcium sulfonate.</p> <p>Lignin sodium sulfonate.</p> <p>Linoleamide (linoleic acid amide).</p> <p>Magnesium fluoride</p>	<p>For use only as bonding agent for aluminum foil, stabilizer, or preservative. Total fluoride from all sources not to exceed 1 percent by weight of the finished adhesives.</p>
<p>Magnesium glycerophosphate.</p> <p>Maleic acid.</p> <p>Maleic anhydride-diisobutylene copolymer, ammonium or sodium salt.</p> <p>Manganese acetate.</p> <p>Marine oil fatty acid soaps, hydrogenated.</p> <p>Melamine.</p> <p>Melamine-formaldehyde copolymer.</p> <p>2-Mercaptobenzothiazole.</p> <p>2-Mercaptobenzothiazole and dimethyl dithiocarbamic acid mixture, sodium salt.</p> <p>2-Mercaptobenzothiazole, sodium or zinc salt</p> <p>Methacrylate-chromic chloride complex, ethyl or methyl ester.</p> <p><i>p</i>-Menthane hydroperoxide.</p> <p>Methyl acetate.</p> <p>Methyl acetyl ricinoleate.</p> <p>Methyl alcohol (methanol).</p> <p>Methylcellulose.</p> <p>Methylene chloride.</p> <p>4,4'-Methylenebis(2,6-di-<i>tert</i>-butylphenol).</p> <p>2,2-Methylenebis (4-ethyl-6-<i>tert</i>-butylphenol).</p> <p>2,2-Methylenebis (4-methyl-6-nonylphenol).</p> <p>2,2-Methylenebis (4-methyl-6-<i>tert</i>-butylphenol).</p> <p>Methyl ethyl ketone.</p> <p>Methyl ethyl ketone-formaldehyde condensate.</p> <p>2-Methylhexane.</p> <p>1-Methyl-2-hydroxy-4-isopropyl benzene.</p> <p>Methyl isobutyl ketone.</p> <p>Methyl oleate.</p> <p>Methyl oleate-palmitate mixture.</p> <p>Methyl phthalyl ethyl glycolate.</p> <p>Methyl ricinoleate.</p> <p>Methyl salicylate.</p> <p><i>a</i>-Methylstyrene-vinyltoluene copolymer resins (molar ratio 1 <i>a</i> methylstyrene to 3 vinyltoluene).</p> <p>Methyl tallowate.</p> <p>Mineral oil.</p> <p>Monochloroacetic acid.</p> <p>Monooctyldiphenylamine.</p> <p>Montan wax.</p> <p>Morpholine.</p> <p>Myristic acid-chromic chloride complex.</p> <p>Myristyl alcohol.</p> <p>Naphtha.</p> <p>Naphthalene, monosulfonated.</p> <p>Naphthalene sulfonic acid-formaldehyde condensate, sodium salt.</p> <p>α-Naphthylamine.</p> <p>$\alpha, \alpha', \alpha'', \alpha'''$-Neopentane tetrayltetrakis [<i>omega</i>-hydroxypoly (oxypropylene) (1–2 moles)], average molecular weight 400.</p> <p>Nitric acid.</p> <p>μ-Nitrobiphenyl.</p> <p>Nitrocellulose.</p> <p>2-Nitropropane.</p> <p>α-(<i>p</i>-Nonylphenyl)-<i>omega</i>-hydroxypoly (oxyethylene) mixture of dihydrogen phosphate and monohydrogen phosphate esters; the nonyl group is a propylene trimer isomer and the poly (oxyethylene) content averages 6–9 moles or 50 moles.</p> <p>α-(<i>p</i>-Nonylphenyl)-<i>omega</i>-hydroxypoly (oxyethylene) produced by the condensation of 1 mole of <i>p</i>-nonylphenol (nonyl group is a propylene trimer isomer) with an average of 1–40 moles of ethylene oxide.</p>	<p>For use as preservative only.</p> <p>For use as preservative only.</p>

Substances	Limitations
<p>α-(<i>p</i>-Nonylphenyl)-ω-hydroxypoly (oxyethylene) sulfate, ammonium salt: the nonyl group is a propylene trimer isomer and the poly (oxyethylene) content averages 9 or 30 moles.</p> <p><i>endo-cis</i>-5-Norbornene-2,3-dicarboxylic anhydride.</p> <p>α-<i>cis</i>-9-Octadecenyl-ω-hydroxypoly (oxyethylene); the octadecenyl group is derived from oleyl alcohol and the poly (oxyethylene) content averages 20 moles.</p> <p>Octadecyl 3,5-di-<i>tert</i>-butyl-4-hydroxyhydrocinnamate.</p> <p>Octyl alcohol.</p> <p>Octyldecyl phthalate.</p> <p>Octylphenol.</p> <p>Octylphenoxyethanols.</p> <p>Octylphenoxypolyethoxy-polypropoxyethanol (13 moles of ethylene oxide and propylene oxide).</p> <p>Odorless light petroleum hydrocarbons.</p> <p>Oleamide (oleic acid amide).</p> <p>Oleic acid, sulfated.</p> <p>2,2'-Oxamidobis[ethyl 3-(3,5-di-<i>tert</i>-butyl-4-hydroxyphenyl)propionate] (CAS Reg. No. 70331–94–1).</p> <p>Oxazoline.</p> <p>α-(oxiranylmethyl)-ω-(oxiranylmethoxy)poly[oxy(methyl-1,2-ethanediyl)], (alternative name: epichlorohydrin-polypropylene glycol) (CAS Reg. No. 26142–30–3).</p> <p>2,2'-[oxybis[(methyl-2,1-ethanediyl)-oxymethylene]]bisoxirane, (alternative name: epichlorohydrin-dipropylene glycol) (CAS Reg. No. 41638–13–5).</p> <p><i>n</i>-Oxydiethylene-benzothiazole.</p> <p>Palmitamide (palmitic acid amide).</p> <p>Paraffin (C₁₂-C₂₀) sulfonate.</p> <p>Paraformaldehyde.</p> <p>Pentachlorophenol.</p> <p>Pentaerythritol ester of maleic anhydride.</p> <p>Pentaerythritol monostearate</p> <p>Pentaerythritol tetrabenzoate [CAS Registry No. 4196–86–5].</p> <p>Pentaerythritol tetrastearate.</p> <p>2,4-Pentanedione.</p> <p>Pentasodium diethylenetriaminepentaacetate (CAS Reg. No. 140–01–2).</p> <p>Perchloroethylene.</p> <p>Petrolatum.</p> <p>Petroleum hydrocarbon resin (cyclopentadiene type), hydrogenated.</p> <p>Petroleum hydrocarbon resin (produced by the catalytic polymerization and subsequent hydrogenation of styrene, vinyltoluene, and indene types from distillates of cracked petroleum stocks).</p> <p>Petroleum hydrocarbon resins (produced by the homo- and copolymerization of dienes and olefins of the aliphatic, alicyclic, and monobenzenoid arylalkene types from distillates of cracked petroleum stocks).</p> <p>Phenol</p> <p>Phenol-coumarone-indene resin.</p> <p>Phenolic resins as described in § 175.300(b)(3)(vi).</p> <p>Phenothiazine</p> <p>Phenyl-β-naphthylamine (free of β-naphthylamine).</p> <p><i>o</i>-Phenylphenol</p> <p><i>o</i>-Phthalic acid.</p> <p>Pimaric acid</p> <p>Pine oil.</p> <p>Piperazine.</p> <p>Piperidinium pentamethylenedithiocarbamate.</p> <p>Poly(acrylamide-[2-acrylamide-2-methylpropylsulfonate]-dimethyldiallyl ammonium chloride) sodium salt (CAS Reg. No. 72275-68-4).</p> <p>Polyamides derived from reaction of one or more of the following acids with one or more of the following amines:</p> <p>Acids:</p> <p>Azelaic acid.</p> <p>Dimerized vegetable oil acids.</p> <p>Amines:</p> <p>Bis(hexamethylene) triamine and higher homologues.</p> <p>Diethylenetriamine.</p> <p>Diphenylamine.</p> <p>Ethylenediamine.</p> <p>Hexamethylenediamine.</p> <p>Poly(oxypropylene)diamine (weight average molecular weight 2010) (CAS Reg. No. 9046–10–0).</p> <p>Poly(oxypropylene)diamine (weight average molecular weight 440) (CAS Reg. No. 9046–10–0).</p>	<p>For use as a reactant in the preparation of epoxy-based resins.</p> <p>For use as a reactant in the preparation of epoxy-based resins.</p> <p>For use as preservative only.</p> <p>For use as preservative only.</p> <p>For use only as polymerization-control agent.</p> <p>For use as preservative only.</p>

Substances	Limitations
<p>Tetraethylenepentamine. Triethylenetetramine. Polybutene, hydrogenated. Polybutylene glycol (molecular weight 1,000). Poly [2(diethylamino) ethyl methacrylate] phosphate. Polyester of adipic acid, phthalic acid, and propylene glycol, terminated with butyl alcohol. Polyester of diglycolic acid and propylene glycol containing ethylene glycol monobutyl ether as a chain stopper. Polyester resins (including alkyd type), as the basic polymer, formed as esters when one or more of the following acids are made to react with one or more of the following alcohols:</p> <p>Acids:</p> <p>Azelaic acid. Dimethyl 1,4-cyclohexanedicarboxylate (CAS Reg. No. 94-60-0). Dimethyl-5-sulfoisophthalic acid (CAS Reg. No. 50975-82-1) and/or its sodium salt (CAS Reg. No. 3965-55-7). Polybasic and monobasic acids identified in § 175.300(b)(3)(vii)(a) and (b). 5-sulfo-1,3-benzenedicarboxylic acid, monosodium salt (CAS Reg. No. 6362-79-4). Tetrahydrophthalic acid.</p> <p>Alcohols:</p> <p>1,4-Cyclohexanedimethanol. 2,2-Dimethyl-1,3-propanediol. 1,6-Hexanediol (CAS Reg. No. 629-11-8). Polyhydric and monohydric alcohols identified in § 175.300(b)(3)(vii)(c) and (d).</p> <p>Polyethylenedipate modified with ethanolamine with the molar ratio of the amine to the adipic acid less than 0.1 to 1. Polyethylene glycol (molecular weight 200-6,000). Polyethylene glycol mono-isotridecyl ether sulfate, sodium salt (CAS Reg. No. 150413-26-6). Polyethyleneglycol alkyl(C₁₀-C₁₂) ether sulfosuccinate, disodium salt (CAS Reg. No. 68954-91-6). Polyethylene, oxidized. Polyethylene resins, carboxyl modified, identified in § 177.1600 of this chapter. Polyethylenimine. Polyethylenimine-epichlorohydrin resins. Poly(ethyloxazoline) (CAS Reg. No. 25805-17-8). Polyisoprene. Polymeric esters of polyhydric alcohols and polycarboxylic acids prepared from glycerin and phthalic anhydride and modified with benzoic acid, castor oil, coconut oil, linseed oil, rosin, soybean oil, styrene, and vinyl toluene. Polymers: Homopolymers and copolymers of the following monomers:</p> <p>Acrylamide. Acrylic acid. Acrylonitrile. Allylmethacrylate (CAS Reg. No. 00096-05-09). Butadiene. Butene. N-tert-Butylacrylamide. Butyl acrylate. 1,3-Butylene glycol dimethacrylate. Butyl methacrylate. Crotonic acid. Decyl acrylate. Diallyl fumarate. Diallyl maleate. Diallyl phthalate. Dibutyl fumarate. Dibutyl itaconate. Dibutyl maleate. Di(2-ethylhexyl) maleate. Dimethyl-α-methylstyrene. Dioctyl fumarate. Dioctyl maleate. Divinylbenzene. Ethyl acrylate. Ethylene.</p>	<p>For use only in the preparation of polyurethan resins.</p>

Substances	Limitations
<p>Ethylene cyanohydrin. 2-Ethylhexyl acrylate. Ethyl methacrylate. Fatty acids, C₁₀₋₁₃-branched, vinyl esters (CAS Reg. No. 184785–38–4). Fumaric acid and/or its methyl, ethyl, propyl, butyl, amyl hexyl, heptyl and octyl esters. Glycidyl methacrylate. 1–Hexene (CAS Reg. No. 592–41–6). 2-Hydroxyethyl acrylate. 2-Hydroxyethyl methacrylate. 2-Hydroxypropyl methacrylate. Isobutyl acrylate. Isobutylene. Itaconic acid. Maleic acid, diester with 2-hydroxyethanesulfonic acid, sodium salt. Maleic anhydride. Methacrylic acid. Methyl acrylate. <i>N,N'</i>-Methylenebisacrylamide. Methyl methacrylate. <i>N</i>-Methylolacrylamide. Methyl styrene. -<i>Methyl styrene</i>. Monoethyl maleate. Monomethyl maleate. Mono (2-ethylhexyl) maleate. 5-Norbornene-2,3-dicarboxylic acid, mono-<i>n</i>-butyl ester. 1-Octene (CAS Reg. No. 111–66–0). Propyl acrylate. Propylene. Styrene. Triallyl cyanurate. Vinyl acetate. Vinyl alcohol (from alcoholysis or hydrolysis of vinyl acetate units). Vinyl butyrate. Vinyl chloride. Vinyl crotonate. Vinyl ethyl ether. Vinyl hexoate. Vinylidene chloride. Vinyl methyl ether. Vinyl pelargonate. Vinyl propionate. Vinyl pyrrolidone. Vinyl stearate. Polyoxyalkylated-phenolic resin (phenolic resin obtained from formaldehyde plus butyl- and/or amylphenols, oxyalkylated with ethylene oxide and/or propylene oxide). Poly(oxycaproyl) diols and triols (minimum molecular weight 500). Polyoxyethylated (40 moles) tallow alcohol sulfate, sodium salt. Polyoxyethylene (20 mol)—anhydrous lanolin adduct. Polyoxyethylene (molecular weight 200) dibenzoate. Polyoxyethylene (molecular weight 200–600) esters of fatty acids derived from animal or vegetable fats and oils (including tall oil). Polyoxyethylene (15 moles) ester of rosin. Polyoxyethylene (4–5 moles) ether of phenol. Polyoxyethylene (25 moles)—glycerol adduct. Polyoxyethylene (40 moles) stearate. Polyoxyethylene (5–15 moles) tridecyl alcohol. Polyoxypropylene (3 moles) tridecyl alcohol sulfate. Polyoxypropylene (20 moles) butyl ether. Polyoxypropylene (40 moles) butyl ether. Polyoxypropylene (20 moles) oleate butyl ether. Polyoxypropylene-polyoxyethylene condensate (minimum molecular weight 1,900). Polypropylene glycol (minimum molecular weight 150). Polypropylene glycol (3–4 moles) triether with 2-ethyl-2-(hydroxymethyl)-1,3-propane-diol, average molecular weight 730. Polypropylene glycol dibenzoate (CAS Reg. No. 72245–46–6) Polypropylene, noncrystalline. Polysiloxanes: Diethyl polysiloxane.</p>	<p>For use as a plasticizer at levels not to exceed 20 percent by weight of the finished adhesive.</p>

§ 175.105

For use only as polymerization-control agent.

For use as preservative only.

For use as a plasticizer at levels not to exceed 20 percent by weight of the finished adhesive.

Substances	Limitations
<p>Fumaric acid. Glycerin. Hydrogen. Isophthalic acid. 4,4'-Isopropylidenediphenol-epichlorohydrin (epoxy). 4,4'-Isopropylidenediphenol-formaldehyde. Maleic anhydride. Methyl alcohol. Pentaerythritol. Phthalic anhydride. Polyethylene glycol. Phenol-formaldehyde. Phenyl μ-cresol-formaldehyde. <p><i>p</i>-Phenylphenol-formaldehyde. Sulfuric acid. Triethylene glycol. Xylenol-formaldehyde. Rosin salts (salts of wood, gum, and tall oil rosin, and the dimers thereof, decarboxylated rosin disproportionated rosin, hydrogenated rosin): Aluminum. Ammonium. Calcium. Magnesium. Potassium. Sodium. Zinc. Rosin, gasoline-insoluble fraction. Rubber hydrochloride polymer. Rubber latex, natural. Salicylic acid Sandarac. Sebacic acid. Shellac. Silicon dioxide as defined in § 172.480(a) of this chapter. Sodium alkyl (C₂-C_{13.5} aliphatic) benzenesulfonate. Sodium aluminum pyrophosphate. Sodium aluminum sulfate. Sodium bisulfate. Sodium calcium silicate. Sodium capryl polyphosphate. Sodium carboxymethylcellulose. Sodium chlorate. Sodium chlorite. Sodium chromate. Sodium decylsulfate. Sodium dehydroacetate Sodium di-(2-ethylhexoate). Sodium di-(2-ethylhexyl) pyrophosphate. Sodium dihexylsulfosuccinate. Sodium diisobutylphenoxydiethoxyethyl sulfonate. Sodium diisobutylphenoxymonoethoxyethyl sulfonate. Sodium diisopropyl- and triisopropyl-naphthalenesulfonate. Sodium dimethyldithiocarbamate. Sodium dioctylsulfosuccinate. Sodium <i>n</i>-dodecylpolyethoxy (50 moles) sulfate. Sodium ethylene ether of nonylphenol sulfate. Sodium 2-ethylhexyl sulfate. Sodium fluoride Sodium formaldehyde sulfoxylate. Sodium formate. Sodium heptadecylsulfate. Sodium hypochlorite. Sodium isododecylphenoxypolyethoxy (40 moles) sulfate. Sodium <i>N</i>-lauroyl sarcosinate. Sodium metaborate. Sodium α-naphthalene sulfonate. Sodium nitrate. Sodium nitrite. Sodium oleoyl isopropanolamide sulfosuccinate. Sodium pentachlorophenate Sodium perborate.</p> </p>	<p>For use as preservative only.</p> <p>For use as preservative only.</p> <p>For use only as bonding agent for aluminum foil, stabilizer, or preservative. Total fluoride for all sources not to exceed 1 percent by weight of the finished adhesive.</p> <p>For use as preservative only.</p>

Substances	Limitations
Sodium persulfate.	For use as preservative only.
Sodium μ -phenylphenate	
Sodium polyacrylate.	For use as preservative only. Do.
Sodium polymethacrylate.	
Sodium polystyrene sulfonate.	
Sodium salicylate	
Sodium salt of 1-hydroxy 2(1H)-pyridine thione	
Sodium tetradecylsulfate.	
Sodium thiocyanate.	
Sodium bis-tridecylsulfosuccinate.	
Sodium xylene sulfonate.	
Sorbitan monooleate.	
Sorbitan monostearate.	For use only as a catalyst for polyurethane resins.
Soybean oil, epoxidized.	
Spermaceti wax.	
Sperm oil wax.	
Stannous 2-ethylhexanoate	
Stannous stearate.	
Starch hydrolysates.	
Starch or starch modified by one or more of the treatments described in §§ 172.892 and 178.3520 of this chapter.	
Starch, reacted with a urea-formaldehyde resin.	
Starch, reacted with formaldehyde.	
Stearamide (stearic acid amide).	For use at levels not to exceed 2 percent by weight of the dry adhesive.
Stearic acid.	
Stearic acid-chromic chloride complex.	
Stearyl-cetyl alcohol, technical grade, approximately 65 percent–80 percent stearyl and 20 percent–35 percent cetyl.	
Strontium salicylate.	
Styrenated phenol.	
Styrene block polymers with 1,3-butadiene.	
Styrene-maleic anhydride copolymer, ammonium or potassium salt.	
Styrene-maleic anhydride copolymer (partially methylated) sodium salt.	
Styrene-methacrylic acid copolymer, potassium salt.	
Sucrose acetate isobutyrate.	For use at levels not to exceed 2 percent by weight of the dry adhesive.
Sucrose benzoate.	
Sucrose octaacetate.	
2-sulfoethyl methacrylate (CAS Registry No. 10595–80–9)	
α -Sulfo-omega-(dodecyloxy)poly (oxyethylene), ammonium salt.	
Sulfonated octadecylene (sodium form).	
Sulfosuccinic acid 4-ester with polyethylene glycol dodecyl ether disodium salt (alcohol moiety produced by condensation of 1 mole of <i>n</i> -dodecyl alcohol and an average of 5–6 moles of ethylene oxide, Chemical Abstracts Service Registry No. 039354–45–5).	
Sulfosuccinic acid 4-ester with polyethylene glycol nonylphenyl ether, disodium salt (alcohol moiety produced by condensation of 1 mole of nonylphenol and an average of 9–10 moles of ethylene oxide) (CAS Reg. No. 9040–38–4).	
Sulfur.	
Synthetic primary linear aliphatic alcohols whose weight average molecular weight is greater than 400 (CAS Reg. No. 71750–71–5).	
Synthetic wax polymer as described in § 176.170(a)(5) of this chapter.	
Tall oil.	For use at levels not to exceed 2 percent by weight of the dry adhesive.
Tall oil fatty acids, linoleic and oleic.	
Tall oil fatty acid methyl ester.	
Tall oil, methyl ester.	
Tall oil pitch.	
Tall oil soaps.	
Tallow alcohol (hydrogenated).	
Tallow amine, secondary (hexadecyl, octadecyl), of hard tallow.	
Tallow, blown (oxidized).	
Tallow, propylene glycol ester.	
Terpene resins (α - and β -pinene) homopolymers, copolymers, and condensates with phenol, formaldehyde, coumarone, and/or indene.	For use at levels not to exceed 2 percent by weight of the dry adhesive.
Terphenyl.	
Terphenyl, hydrogenated.	
Terpineol.	
Tetraethylene pentamine.	
Tetraethylthiuram disulfide.	
Tetrahydrofuran.	
Tetrahydrofurfuryl alcohol.	
Tetra-isopropyl titanate.	
Tetrakis[methylene (3,5-di- <i>tert</i> -butyl-4-hydroxy-hydro-cinnamate)] methane.	

Substances	Limitations
A[<i>p</i> -(1,1,3,3-Tetramethylbutyl) phenyl]- <i>omega</i> -hydroxypoly-(oxyethylene) produced by the condensation of 1 mole of <i>p</i> -(1,1,3,3-tetramethylbutyl) phenol with an average of 1–40 moles of ethylene oxide.	
A- <i>p</i> -(1,1,3,3-Tetramethylbutyl) phenyl]- <i>omega</i> -hydroxy-poly(oxyethylene) mixture of dihydrogen phosphate and monohydrogen phosphate esters and their sodium, potassium, and ammonium salts having a poly(oxyethylene) content averaging 6–9 or 40 moles.	
Tetramethyl decanediol.	
Tetramethyl decynediol.	
Tetramethyl decynediol plus 1–30 moles of ethylene oxide.	
Tetramethylthiuram monosulfide.	
Tetrasodium <i>N</i> -(1,2-dicarboxyethyl)- <i>N</i> -octadecylsulfosuccinamate.	
4,4'-Thiobis-6- <i>tert</i> -butyl- <i>m</i> -cresol.	
Thiodiethylene-bis(3,5-di- <i>tert</i> -butyl-4-hydroxyhydrocinnamate).	
2,2'-(2,5-Thiophenediyl) bis[5- <i>tert</i> -butylbenzoxazole].	
Thiram.	
Thymol	For use as preservative only.
Titanium dioxide.	
Titanium dioxide-barium sulfate.	
Titanium dioxide-calcium sulfate.	
Titanium dioxide-magnesium silicate.	
Toluene.	
Toluene 2,4-diisocyanate.	
Toluene 2,6-diisocyanate.	
<i>o</i> - and <i>p</i> -Toluene ethyl sulfonamide.	
<i>o</i> - and <i>p</i> -Toluene sulfonamide.	
<i>p</i> -Toluene sulfonic acid.	
<i>p</i> -(<i>p</i> -Toluene-sulfonylamide)-diphenylamide.	
Triazine-formaldehyde resins as described in § 175.300(b)(3)(xiii).	
Tributoxyethyl phosphate.	
Tributylcitrate.	
Tri- <i>tert</i> -butyl- <i>p</i> -phenyl phenol	For use as preservative only.
Tributyl phosphate.	
Tributyltin chloride complex of ethylene oxide condensate of dehydroabietylamine.	For use as preservative only.
Tri- <i>n</i> -butyltin acetate	For use as preservative only.
Tri- <i>n</i> -butyltin neodecanoate	Do.
1,1,1-Trichloroethane.	
1,1,2-Trichloroethane.	
Trichloroethylene.	
Tri-β-chloroethylphosphate.	
Tridecyl alcohol.	
Triethanolamine.	
3-(Triethoxysilyl) propylamine.	
Triethylene glycol.	
Triethylene glycol dibenzoate.	
Triethylene glycol di(2-ethylhexoate).	
Triethylene glycol polyester of benzoic acid and phthalic acid.	
Triethylhexyl phosphate.	
Triethylphosphate.	
2,4,5-Trihydroxy butyrophenone.	
Triisopropanolamine.	
Trimethylol propane.	
2,2,4-Trimethylpentanediol-1,3-diisobutyrate.	
Trimeric aromatic amine resin from diphenylamine and acetone of molecular weight approximately 500.	
Tri(nonylphenyl) phosphite-formaldehyde resins	As identified in § 177.2600(c)(4)(iii) of this chapter. For use only as a stabilizer.
Triphenylphosphate.	
Tripropylene glycol monomethyl ether.	
1,3,5-Tris (3,5-di- <i>tert</i> -butyl-4-hydroxy-benzyl)-triazine-2,4,6 (1H,3H,5H)-trione.	
Tris (<i>p</i> -tertiary butyl phenyl) phosphate.	
Tris(2-methyl-4-hydroxy-5- <i>tert</i> -butyl-phenyl)butane.	
Trisodium <i>N</i> -hydroxyethylethylenediaminetriacetate (CAS Reg. No. 139–89–9).	
Turpentine.	
Urea-formaldehyde resins as described in § 175.300(b)(3)(xii).	
Vegetable oil, sulfonated or sulfated, potassium salt.	
Vinyl acetate-maleic anhydride copolymer, sodium salt.	
Waxes, petroleum.	
Wax, petroleum, chlorinated (40% to 70% chlorine).	
Waxes, synthetic paraffin (Fischer-Tropsch process).	
3-(2-Xenolyl)-1,2-epoxypropane.	

Substances	Limitations
Xylene. Xylene (or toluene) alkylated with dicyclopentadiene. Zein. Zinc acetate. Zinc ammonium chloride. Zinc dibenzyl dithiocarbamate. Zinc dibutylthiocarbamate. Zinc diethylthiocarbamate. Zinc di(2-ethylhexoate). Zinc formaldehyde sulfoxylate. Zinc naphthenate and dehydroabietylamine mixture. Zinc nitrate. Zinc orthophosphate. Zinc resinate. Zinc sulfide. Zineb (zinc ethylenebis-dithiocarbamate). Ziram (zinc dimethylthiocarbamate).	

[42 FR 14534, Mar. 15, 1977; 42 FR 56728, Oct. 28, 1977]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §175.105, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.fdsys.gov.

§ 175.125 Pressure-sensitive adhesives.

Pressure-sensitive adhesives may be safely used as the food-contact surface of labels and/or tapes applied to food, in accordance with the following prescribed conditions:

(a) Pressure-sensitive adhesives prepared from one or a mixture of two or more of the substances listed in this paragraph may be used as the food-contact surface of labels and/or tapes applied to poultry, dry food, and processed, frozen, dried, or partially dehydrated fruits or vegetables.

(1) Substances generally recognized as safe in food.

(2) Substances used in accordance with a prior sanction or approval.

(3) Color additives listed for use in or on food in parts 73 and 74 of this chapter.

(4) Substances identified in §172.615 of this chapter other than substances used in accordance with paragraph (a)(2) of this section.

(5) Polyethylene, oxidized; complying with the identity prescribed in §177.1620(a) of this chapter.

(6) 4-[[[4, 6-Bis(octylthio)-s-triazin-2-yl]amino]-2,6-di-*tert*-butylphenol (CAS Reg. No. 991-84-4) as an antioxidant/stabilizer at a level not to exceed 1.5 percent by weight of the finished pressure-sensitive adhesive.

(7) 2,2'-(2,5-Thiophenediyl)-bis(5-*tert*-butylbenzoxazole) (CAS Reg. No. 7128-

64-5) as an optical brightener at a level not to exceed 0.05 percent by weight of the finished pressure-sensitive adhesive.

(8) 2-Hydroxy-1-[4-(2-hydroxyethoxy)phenyl]-2-methyl-1-propanone (CAS Reg. No. 106797-53-9) as a photoinitiator at a level not to exceed 5 percent by weight of the pressure-sensitive adhesive.

(9) Butanedioic acid, sulfo-1,4-di-(C₉-C₁₁ alkyl) ester, ammonium salt (also known as butanedioic acid sulfo-1, 4-diisodecyl ester, ammonium salt [CAS Reg. No. 144093-88-9]) as a surface active agent at a level not to exceed 3.0 percent by weight of the finished pressure-sensitive adhesive.

(b) Pressure-sensitive adhesives prepared from one or a mixture of two or more of the substances listed in this paragraph may be used as the food-contact surface of labels and/or tapes applied to raw fruit and raw vegetables.

(1) Substances listed in paragraphs (a)(1), (a)(2), (a)(3), (a)(5), (a)(6), (a)(7), (a)(8), and (a)(9) of this section, and those substances prescribed by paragraph (a)(4) of this section that are not identified in paragraph (b)(2) of this section.

(2) Substances identified in this subparagraph and subject to the limitations provided:

BHA.

BHT.

Butadiene-acrylonitrile copolymer.

§ 175.210

Butadiene-acrylonitrile-styrene copolymer.
 Butadiene-styrene copolymer.
 Butyl rubber.
 Butylated reaction product of *p*-cresol and dicyclopentadiene produced by reacting *p*-cresol and dicyclopentadiene in an approximate mole ratio of 1.5 to 1.0, respectively, followed by alkylation with isobutylene so that the butyl content of the final product is not less than 18 percent, for use at levels not to exceed 1.0 percent by weight of the adhesive formulation.
 Chlorinated natural rubber.
 Isobutylene-styrene copolymer.
 Petrolatum.
 Polybutene-1.
 Polybutene, hydrogenated; complying with the identity prescribed under § 178.3740(b) of this chapter.
 Polyisobutylene.
cis-1,4-Polyisoprene.
 Polystyrene.
 Propyl gallate.
 Rapeseed oil, vulcanized.
 Rosins and rosin derivatives as provided in § 178.3870 of this chapter.
 Rubber hydrochloride.
 Rubber (natural latex solids or crepe, smoked or unsmoked).
 Terpene resins (α - and β -pinene), homopolymers, copolymers, and condensates with phenol, formaldehyde, coumarone, and/or indene.
 Tetrasodium ethylenediaminetetraacetate.
 Tri(mixed mono- and dinonylphenyl) phosphite (which may contain not more than 1 percent by weight of triisopropanolamine).

(c) Acrylonitrile copolymers identified in this section shall comply with the provisions of § 180.22 of this chapter.

[42 FR 14534, Mar. 15, 1977, as amended at 42 FR 15674, Mar. 22, 1977; 48 FR 15617, Apr. 12, 1983; 63 FR 3464, Jan. 23, 1998; 63 FR 51528, Sept. 28, 1998; 64 FR 48291, Sept. 3, 1999]

Subpart C—Substances for Use as Components of Coatings

§ 175.210 Acrylate ester copolymer coating.

Acrylate ester copolymer coating may safely be used as a food-contact surface of articles intended for packaging and holding food, including heating of prepared food, subject to the provisions of this section:

(a) The acrylate ester copolymer is a fully polymerized copolymer of ethyl acrylate, methyl methacrylate, and methacrylic acid applied in emulsion

21 CFR Ch. I (4–1–11 Edition)

form to molded virgin fiber and heat-cured to an insoluble resin.

(b) Optional substances used in the preparation of the polymer and in the preparation and application of the emulsion may include substances named in this paragraph, in an amount not to exceed that required to accomplish the desired technical effect and subject to any limitation prescribed: *Provided, however,* That any substance named in this paragraph and covered by a specific regulation in subchapter B of this chapter must meet any specifications in such regulation.

List of substances	Limitations
Aluminum stearate. Ammonium lauryl sulfate. Borax	Not to exceed the amount required as a preservative in emulsion defoamer. Do.
Disodium hydrogen phosphate Formaldehyde. Glyceryl monostearate. Methyl cellulose. Mineral oil. Paraffin wax. Potassium hydroxide. Potassium persulfate. Tallow. Tetrasodium pyrophosphate. Titanium dioxide.	

(c) The coating in the form in which it contacts food meets the following tests:

(1) An appropriate sample when exposed to distilled water at 212 °F for 30 minutes shall yield total chloroform-soluble extractables not to exceed 0.5 milligram per square inch.

(2) An appropriate sample when exposed to *n*-heptane at 120 °F for 30 minutes shall yield total chloroform-soluble extractables not to exceed 0.5 milligram per square inch.

§ 175.230 Hot-melt strippable food coatings.

Hot-melt strippable food coatings may be safely applied to food, subject to the provisions of this section.

(a) The coatings are applied to and used as removable coatings for food.

(b) The coatings may be prepared, as mixtures, from the following substances:

(1) Substances generally recognized as safe in food.

(2) Substances identified in this sub-paragraph.