

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

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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,* 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
<p>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 C₃₀ and higher groups (CAS Reg. No. 70983-55-0). 4-[2-[2-(Alkoxy (C₁₂-C₁₅) ethoxy) ethoxy]ethyl] disodium sulfosuccinate. 1-Alkyl (C₆-C₁₈) amino-3-amino-propane monoacetate. Alkylated (C₄ and/or C₈) phenols. Alkyl (C₇-C₁₂) benzene. Alkyl (C₁₀-C₂₀) dimethylbenzyl ammonium chloride. n-Alkyl(C₁₂, C₁₄, C₁₆, or C₁₈) dimethyl (ethylbenzyl) ammonium cyclohexylsulfamate. Alkyl ketene dimers as described in § 176.120 of this chapter. Alkyl (C₇-C₁₂) naphthalene. alpha Olefin sulfonate [alkyl group is in the range of C₁₀-C₁₈ with not less than 50 percent C₁₄-C₁₆], ammonium, calcium, magnesium, potassium, and sodium salts. 2-[(2-aminoethyl)amino]ethanol (CAS Reg. No. 111-41-1). 3-Aminopropanediol</p>	<p>For use as preservative only.</p> <p>For use only in the preparation of polyurethane resins.</p>
<p>Aluminum. Aluminum acetate. Aluminum di(2-ethylhexoate). Aluminum potassium silicate. N-beta-Aminoethyl-gamma-aminopropyl trimethoxysilane. 3-(Aminomethyl)-3,5,5-trimethylcyclohexylamine. Aminomethylpropanol. Ammonium benzoate Ammonium bifluoride</p>	<p>For use as preservative 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>Ammonium borate. Ammonium citrate. Ammonium persulfate. Ammonium polyacrylate. Ammonium potassium hydrogen phosphate. Ammonium silico-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 adhesive.</p>
<p>Ammonium sulfamate. Ammonium thiocyanate. Ammonium thiosulfate. Amyl acetate. Anhydroenneaheptitol. Animal glue as described in § 178.3120 of this chapter. 2-Antraquinone sulfonic acid, sodium salt</p>	<p>For use only as polymerization-control agent.</p>
<p>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). 1,2-Benzisothiazolin-3-one (CAS Registry No. 2634-33-5) Benzothiazyldisulfide. p-Benzoxyphenol Benzoyl peroxide.</p>	<p>For use as a stabilizer.</p> <p>For use as preservative only.</p> <p>For use as preservative only.</p>

Substances	Limitations
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-tert</i> -Butylphenyl salicylate.	
Butyl phthalate butyl glycolate.	
<i>p-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'-methylene-dipiperidine 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.	
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.

Substances	Limitations
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> -xylenol)	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> -Dialkyl-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 xyllyl.	
1,2-Dibromo-2,4-dicyanobutane (CAS Registry No. 3569-65-7)	For use as a preservative only.
2,2-Dibromo-3-nitropropionamide (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.	
Diethylene glycol monoethyl ether.	
Diethylene glycol monoethyl ether acetate.	
Diethylene glycol monomethyl ether.	
Diethylene glycol monooleate.	
Diethylene glycol monophenyl ether.	

Substances	Limitations
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. Diisooctyl phthalate. Diisopropylbenzene hydroperoxide. <i>N,N</i> -Dimethylcyclohexylamine dibutylthiocarbamate. Dimethyl formamide. Dimethyl hexynol. 2,2-Dimethyl-1,3-propanediol dibenzoate. Dimethyl octynediol. <i>N</i> -(1,1-dimethyl-3-oxobutyl) acrylamide. Dimethyl phthalate.	For use as an antifungal preservative only.
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 thiodipropionate.	For use as preservative only.
3,5-Di- <i>tert</i> -butyl-4-hydroxyhydrocinnamic 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. 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). Ethoxypropanol butyl ether. Ethyl alcohol (ethanol).	For use as antioxidant only.

Substances	Limitations
5-Ethyl-1,3-diglycidyl-5-methylhydantoin (CAS Reg. No. 15336-82-0). Ethylene-acrylic acid-carbon monoxide copolymer (CAS Reg. No. 97756-27-9). 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). Ethylenediamine. Ethylenediaminetetra-acetic acid, calcium, ferric, potassium, or sodium salts, single or mixed. Ethylene dichloride. Ethylene glycol. Ethylene glycol monobutyl ether. Ethylene glycol monobutyl ether acetate. Ethylene glycol monoethyl ether. Ethylene glycol monoethyl ether acetate. Ethylene glycol monoethyl ether ricinoleate. Ethylene glycol monomethyl ether. Ethylene glycol monophenyl ether. Ethylene-carbon monoxide copolymer (CAS Reg. No. 25052-62-4) containing not more than 30 weight percent of the units derived from carbon monoxide. Ethylene-maleic anhydride copolymer, ammonium or potassium salt. Ethylene-methacrylic acid copolymer partial salts: Ammonium, calcium, magnesium, sodium, and/or zinc. Ethylene-methacrylic acid-vinyl acetate copolymer partial salts: Ammonium, calcium, magnesium, sodium, and/or zinc. Ethylene-octene-1 copolymers containing not less than 70 weight percent ethylene (CAS Reg. No. 26221-73-8). Ethylene-propylene-dicyclopentadiene copolymer rubber. Ethylene, propylene, 1,4-hexadiene and 2,5-norbornadiene tetrapolymer. 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.	
2,2'-Ethyldenebis(4,6-di- <i>tert</i> -butylphenol) (CAS Reg. No. 35958-30-6).	For use as preservative only.
Ethyl <i>p</i> -hydroxybenzoate Ethyl hydroxyethylcellulose. Ethyl lactate.	
2,2'-Ethyldenebis(4,6-di- <i>tert</i> -butylphenyl)fluorophosphonite (CAS Reg. No. 118337-09-0).	For use as an antioxidant and/or stabilizer only.
Ethyl phthalyl ethyl glycolate. Ethyl <i>p</i> -toluene sulfonamide	
Fats and oils derived from animal or vegetable sources, and the hydrogenated, sulfated, or sulfonated forms of such fats and oils.	
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.	
Zinc.	
Ferric chloride.	
Fluosilicic acid (hydrofluosilicic acid)	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.
Formaldehyde.	
Formaldehyde <i>o</i> - and <i>p</i> -toluene sulfonamide.	
Formamide.	
Fumaratochromium (III) nitrate.	
Furfural.	
Furfuryl alcohol.	
Fumaric acid.	
<i>gamma</i> -Aminopropyltrimethoxysilane (CAS Reg. No. 13822-56-5).	
Glutaraldehyde.	
Glycerides, di- and monoesters.	
Glycerol polyoxypropylene triol, minimum average molecular weight 250 (CAS Reg. No. 25791-96-2).	For use only in the preparation of polyester and polyurethane resins in adhesives.
Glyceryl borate (glycol borborate resin).	
Glyceryl ester of damar, copal, elemi, and sandarac.	
Glyceryl monobutyl ricinoleate.	
Glyceryl monohydroxy stearate.	
Glyceryl monohydroxy tallowate.	

Substances	Limitations
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	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.
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)	For use only in the preparation of polyurethane resins.
Hydroquinone. Hydroquinone monobenzyl ether. Hydroquinone monoethyl ether. 2-(2'-Hydroxy-3',5'- <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 (C ₆ -C ₁₇) imidazolium chloride. Hydroxyethyldiethylenetriamine. β-Hydroxyethyl pyridinium 2-mercaptobenzothiazol. Hydroxyethyl starch. Hydroxyethylurea Hydroxylamine sulfate.	For use only as a photoinitiator at a level not to exceed 5 percent by weight of the adhesive.
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	For use only as an antibacterial preservative. For use only as an antifungal preservative. For use only as polymerization-control agent.
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. Lauroyl peroxide. Lauroyl sulfate salts: Ammonium. Magnesium. Potassium.	For use as preservative only.

Substances	Limitations
Sodium. Lauryl alcohol. Lauryl pyridinium 5-chloro-2-mercaptobenzothiazole. Lignin calcium sulfonate. Lignin sodium sulfonate. Linoleamide (linoleic acid amide). Magnesium 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 adhesives.
Magnesium glycerophosphate. Maleic acid. Maleic anhydride-diisobutylene copolymer, ammonium or sodium salt. Manganese acetate. Marine oil fatty acid soaps, hydrogenated. Melamine. Melamine-formaldehyde copolymer. 2-Mercaptobenzothiazole.	For use as preservative only.
2-Mercaptobenzothiazole and dimethyl dithiocarbamic acid mixture, sodium salt. 2-Mercaptobenzothiazole, sodium or zinc salt	For use as preservative only.
Methacrylate-chromic chloride complex, ethyl or methyl ester. <i>p</i> -Menthane hydroperoxide. Methyl acetate. Methyl acetyl ricinoleate. Methyl alcohol (methanol). Methylcellulose. Methylene chloride. 4,4'-Methylenebis(2,6-di- <i>tert</i> -butylphenol). 2,2-Methylenebis (4-ethyl-6- <i>tert</i> -butylphenol). 2,2-Methylenebis (4-methyl-6-nonylphenol). 2,2-Methylenebis (4-methyl-6- <i>tert</i> -butylphenol). Methyl ethyl ketone. Methyl ethyl ketone-formaldehyde condensate. 2-Methylhexane. 1-Methyl-2-hydroxy-4-isopropyl benzene. Methyl isobutyl ketone. Methyl oleate. Methyl oleate-palmitate mixture. Methyl phthalyl ethyl glycolate. Methyl ricinoleate. Methyl salicylate.	
<i>a</i> -Methylstyrene-vinyltoluene copolymer resins (molar ratio 1 <i>a</i> methylstyrene to 3 vinyltoluene). Methyl tallowate.	
Mineral oil. Monochloroacetic acid. Monooctyldiphenylamine. Montan wax. Morpholine. Myristic acid-chromic chloride complex. Myristyl alcohol. Naphtha. Naphthalene, monosulfonated. Naphthalene sulfonic acid-formaldehyde condensate, sodium salt.	
α -Naphthylamine. $\alpha, \alpha', \alpha'', \alpha'''$ -Neopentane tetrayltetrakis [<i>omega</i> -hydroxypoly (oxypropylene) (1-2 moles)], average molecular weight 400.	
Nitric acid. μ -Nitrobiphenyl. Nitrocellulose. 2-Nitropropane. 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.	
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.	
α -(<i>p</i> -Nonylphenyl)- <i>omega</i> -hydroxypoly (oxyethylene) sulfate, ammonium salt: the nonyl group is a propylene trimer isomer and the poly (oxyethylene) content averages 9 or 30 moles. <i>endo-cis</i> -5-Norbornene-2,3-dicarboxylic anhydride.	

Substances	Limitations
<p><i>α</i>-<i>cis</i>-9-Octadecenyl-<i>ω</i>-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><i>α</i>-(oxiranylmethyl)-<i>ω</i>-(oxiranylmethoxy)poly[oxy(methyl-1,2-ethanediy)], (alternative name: epichlorohydrin-polypropylene glycol) (CAS Reg. No. 26142-30-3).</p> <p>2,2'-[oxybis(methyl-2,1-ethanediy)-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-<i>β</i>-naphthylamine (free of <i>β</i>-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]-dimethylidiallyl 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 style="padding-left: 20px;">Acids:</p> <p style="padding-left: 40px;">Azelaic acid.</p> <p style="padding-left: 40px;">Dimerized vegetable oil acids.</p> <p style="padding-left: 20px;">Amines:</p> <p style="padding-left: 40px;">Bis(hexamethylene) triamine and higher homologues.</p> <p style="padding-left: 40px;">Diethylenetriamine.</p> <p style="padding-left: 40px;">Diphenylamine.</p> <p style="padding-left: 40px;">Ethylenediamine.</p> <p style="padding-left: 40px;">Hexamethylenediamine.</p> <p style="padding-left: 40px;">Poly(oxypropylene)diamine (weight average molecular weight 2010) (CAS Reg. No. 9046-10-0).</p> <p style="padding-left: 40px;">Poly(oxypropylene)diamine (weight average molecular weight 440) (CAS Reg. No. 9046-10-0).</p> <p style="padding-left: 40px;">Tetraethylenepentamine.</p> <p style="padding-left: 40px;">Triethylenetetramine.</p> <p>Polybutene, hydrogenated.</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>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> <ul style="list-style-type: none"> 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>Alcohols:</p> <ul style="list-style-type: none"> 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>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(ethylloxazoline) (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> <ul style="list-style-type: none"> Acrylamide. Acrylic acid. Acrylonitrile. Allylmethacrylate (CAS Reg. No. 00096-05-09). Butadiene. Butene. <i>N-tert</i>-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. Ethylene cyanohydrin. 2-Ethylhexyl acrylate. Ethyl methacrylate. 	<p>For use only in the preparation of polyurethan resins.</p>

Substances	Limitations
<p>Fatty acids, C₁₀₋₁₃-branched, vinyl esters (CAS Reg. No. 184785-38-4).</p> <p>Fumaric acid and/or its methyl, ethyl, propyl, butyl, amyl hexyl, heptyl and octyl esters.</p> <p>Glycidyl methacrylate.</p> <p>1-Hexene (CAS Reg. No. 592-41-6).</p> <p>2-Hydroxyethyl acrylate.</p> <p>2-Hydroxyethyl methacrylate.</p> <p>2-Hydroxypropyl methacrylate.</p> <p>Isobutyl acrylate.</p> <p>Isobutylene.</p> <p>Itaconic acid.</p> <p>Maleic acid, diester with 2-hydroxyethanesulfonic acid, sodium salt.</p> <p>Maleic anhydride.</p> <p>Methacrylic acid.</p> <p>Methyl acrylate.</p> <p><i>N,N</i>-Methylenebisacrylamide.</p> <p>Methyl methacrylate.</p> <p><i>N</i>-Methylolacrylamide.</p> <p>Methyl styrene.</p> <p>-Methyl styrene.</p> <p>Monoethyl maleate.</p> <p>Monomethyl maleate.</p> <p>Mono (2-ethylhexyl) maleate.</p> <p>5-Norbornene-2 3-dicarboxylic acid, mono-<i>n</i>-butyl ester.</p> <p>1-Octene (CAS Reg. No. 111-66-0).</p> <p>Propyl acrylate.</p> <p>Propylene.</p> <p>Styrene.</p> <p>Triallyl cyanurate.</p> <p>Vinyl acetate.</p> <p>Vinyl alcohol (from alcoholysis or hydrolysis of vinyl acetate units).</p> <p>Vinyl butyrate.</p> <p>Vinyl chloride.</p> <p>Vinyl crotonate.</p> <p>Vinyl ethyl ether.</p> <p>Vinyl hexoate.</p> <p>Vinylidene chloride.</p> <p>Vinyl methyl ether.</p> <p>Vinyl pelargonate.</p> <p>Vinyl propionate.</p> <p>Vinyl pyrrolidone.</p> <p>Vinyl stearate.</p> <p>Polyoxyalkylated-phenolic resin (phenolic resin obtained from formaldehyde plus butyl- and/or amylphenols, oxyalkylated with ethylene oxide and/or propylene oxide).</p> <p>Poly(oxycaproyl) diols and triols (minimum molecular weight 500).</p> <p>Polyoxyethylated (40 moles) tallow alcohol sulfate, sodium salt.</p> <p>Polyoxyethylene (20 mol)—anhydrous lanolin adduct.</p> <p>Polyoxyethylene (molecular weight 200) dibenzoate.</p> <p>Polyoxyethylene (molecular weight 200-600) esters of fatty acids derived from animal or vegetable fats and oils (including tall oil).</p> <p>Polyoxyethylene (15 moles) ester of rosin.</p> <p>Polyoxyethylene (4-5 moles) ether of phenol.</p> <p>Polyoxyethylene (25 moles)—glycerol adduct.</p> <p>Polyoxyethylene (40 moles) stearate.</p> <p>Polyoxyethylene (5-15 moles) tridecyl alcohol.</p> <p>Polyoxypropylene (3 moles) tridecyl alcohol sulfate.</p> <p>Polyoxypropylene (20 moles) butyl ether.</p> <p>Polyoxypropylene (40 moles) butyl ether.</p> <p>Polyoxypropylene (20 moles) oleate butyl ether.</p> <p>Polyoxypropylene-polyoxyethylene condensate (minimum molecular weight 1,900).</p> <p>Polypropylene glycol (minimum molecular weight 150).</p> <p>Polypropylene glycol (3-4 moles) triether with 2-ethyl-2-(hydroxymethyl)-1,3-propane-diol, average molecular weight 730.</p> <p>Polypropylene glycol dibenzoate (CAS Reg. No. 72245-46-6)</p> <p>Polypropylene, noncrystalline.</p> <p>Polysiloxanes:</p> <ul style="list-style-type: none"> Diethyl polysiloxane. Dihydrogen polysiloxane. Dimethyl polysiloxane. Diphenyl polysiloxane. 	<p>For use as a plasticizer at levels not to exceed 20 percent by weight of the finished adhesive.</p>

Substances	Limitations
Ethyl hydrogen polysiloxane. Ethyl phenyl polysiloxane. Methyl ethyl polysiloxane. Methyl hydrogen polysiloxane. Methyl phenyl polysiloxane. Phenyl hydrogen polysiloxane.	
Polysorbate 60.	
Polysorbate 80.	
Polysorbate 20 (polyoxyethylene (20) sorbitan monolaurate).	
Polysorbate 40 (polyoxyethylene (20) sorbitan monopalmitate).	
Poly[styrene-co-disodium maleate-co- α -(<i>p</i> -nonyl-phenyl)- <i>omega</i> -(<i>p</i> -vinyl-benzyl)poly(oxyethylene)] terpolymer.	
Polytetrafluoroethylene.	
Polyurethane resins produced by: (1) reacting diisocyanates with one or more of the polyols or polyesters named in this paragraph, or (2) reacting the chloroformate derivatives of one or more of the polyols or polyesters named in this paragraph with one or more of the polyamines named in this paragraph, or (3) reacting toluene diisocyanate or 4,4' methylenebis(cyclohexylisocyanate) (CAS Reg. No. 5124-30-1) with: (i) one or more of the polyols or polyesters named in this paragraph and with either <i>N</i> -methyldiethanolamine (CAS Reg. No. 105-59-9) and dimethyl sulfate (CAS Reg. No. 77-78-1) or dimethylolpropionic acid (CAS Reg. No. 4767-03-7) and triethylamine (CAS Reg. No. 121-44-8), or (ii) a fumaric acid-modified polypropylene glycol or fumaric acid-modified tripropylene glycol), triethylamine (CAS Reg. No. 107-15-3), and ethylenediamine (CAS Reg. No. 121-44-8), or (4) reacting <i>meta</i> -tetramethylxylene diisocyanate (CAS Reg. No. 2778-42-9) with one or more of the polyols and polyesters listed in this paragraph and with dimethylolpropionic acid (CAS Reg. No. 4767-03-7) and triethylamine (CAS Reg. No. 121-44-8), <i>N</i> -methyldiethanolamine (CAS Reg. No. 105-59-9), 2-dimethylaminoethanol (CAS Reg. No. 108-01-0), 2-dimethylamino-2-methyl-1-propanol (CAS Reg. No. 7005-47-2), and/or 2-amino-2-methyl-1-propanol (CAS Reg. No. 124-68-5).	
Polyvinyl alcohol modified so as to contain not more than 3 weight percent of comonomer units derived from 1-alkenes having 12 to 20 carbon atoms.	
Polyvinyl butyral.	
Polyvinyl formal.	
Potassium ferricyanide	For use only as polymerization-control agent.
Potassium <i>N</i> -methylthiocarbamate.	
Potassium pentachlorophenate	For use as preservative only.
Potassium permanganate.	
Potassium persulfate.	
Potassium phosphates (mono-, di-, tribasic).	
Potassium tripolyphosphate.	
α , α' , α'' -1,2,3-Propanetriyltris [<i>omega</i> -(2,3-epoxypropoxy) poly(oxypropylene) (24 moles)].	
β -Propiolactone.	
Propyl alcohol (propanol).	
Propylene carbonate.	
Propylene glycol and <i>p-p'</i> -isopropylidenediphenol diether.	
Propylene glycol dibenzoate (CAS Reg. No. 19224-26-1)	For use as a plasticizer at levels not to exceed 20 percent by weight of the finished adhesive.
Propylene glycol esters of coconut fatty acids.	
Propylene glycol monolaurate.	
Propylene glycol monomethyl ether.	
Propylene glycol monostearate.	
α , α' , α'' -[Propylidynetris (methylene)] tris [<i>omega</i> -hydroxypoly(oxypropylene) (1.5 moles minimum)], minimum molecular weight 400.	
Quaternary ammonium chloride (hexadecyl, octadecyl derivative)	For use as preservative only.
Rosin (wood, gum, and tall oil rosin), rosin dimers, decarboxylated rosin (including rosin oil, disproportionated rosin, and these substances as modified by one or more of the following reactants:	
Alkyl (C ₁ -C ₈) phenolformaldehyde.	
Ammonia.	
Ammonium caseinate- <i>p</i> -Cyclohexylphenolformaldehyde.	
Diethylene glycol.	
Dipentaerythritol.	
Ethylene glycol.	
Formaldehyde.	
Fumaric acid.	
Glycerin.	
Hydrogen.	

Substances	Limitations
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. <i>p</i> -Phenylphenol-formaldehyde. Sulfuric acid. Triethylene glycol. Xylenol-formaldehyde.	
Rosin salts (salts of wood, gum, and tall oil rosin, and the dimers there- of, 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	For use as preservative only.
Sandarac. Sebacic acid. Shellac.	
Silicon dioxide as defined in § 172.480(a) of this chapter.	
Sodium alkyl (C ₂ -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	For use as preservative only.
Sodium di-(2-ethylhexoate). Sodium di-(2-ethylhexyl) pyrophosphate. Sodium dihexylsulfosuccinate.	
Sodium disobutylphenoxydiethoxyethyl 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	For use only as bonding agent for aluminum foil, sta- bilizer, or preservative. Total fluoride for all sources not to exceed 1 percent by weight of the finished adhesive.
Sodium formaldehyde sulfoxylate. Sodium formate. Sodium heptadecylsulfate.	
Sodium hypochlorite. Sodium isododecylphenoxy polyethoxy (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	For use as preservative only.
Sodium perborate. Sodium persulfate.	
Sodium μ -phenylphenate	For use as preservative only.
Sodium polyacrylate.	

Substances	Limitations
<p>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. 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). 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. Sucrose benzoate. Sucrose octaacetate. 2-sulfoethyl methacrylate (CAS Registry No. 10595–80–9)</p>	<p>For use as preservative only. Do.</p> <p>For use only as a catalyst for polyurethane resins.</p> <p>For use at levels not to exceed 2 percent by weight of the dry adhesive.</p>
<p>α-Sulfo-omega-(dodecylloxy)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. 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. Terphenyl. Terphenyl, hydrogenated. Terpeneol. Tetraethylene pentamine. Tetraethylthiuram disulfide. Tetrahydrofuran. Tetrahydrofurfuryl alcohol. Tetra-isopropyl titanate. Trakis[methylene (3,5-di-<i>tert</i>-butyl-4-hydroxy-hydro-cinnamate)] methane. 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.</p>	

Substances	Limitations
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.	As identified in § 177.2600(c)(4)(iii) of this chapter.
Tri(nonylphenyl) phosphite-formaldehyde resins	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.	
Xylene.	
Xylene (or toluene) alkylated with dicyclopentadiene.	
Zein.	

Substances	Limitations
Zinc acetate. Zinc ammonium chloride. Zinc dibenzyl dithiocarbamate. Zinc dibutyldithiocarbamate. Zinc diethyldithiocarbamate. Zinc di(2-ethylhexoate). Zinc formaldehyde sulfoxylate. Zinc naphthenate and dehydroabietylamine mixture. Zinc nitrate. Zinc orthophosphate. Zinc resinates. Zinc sulfide. Zineb (zinc ethylenebis-dithiocarbamate). Ziram (zinc dimethyldithiocarbamate).	

[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 on GPO Access.

§ 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.

Butadiene-acrylonitrile-styrene copolymer.

Butadiene-styrene copolymer.

Butyl rubber.

Butylated reaction product of *p*-cresol and dicyclopentadiene produced by reacting *p*-