§ 176.210 Defoaming agents used in the manufacture of paper and paperboard.

Defoaming agents may be safely used in the manufacture of paper and paperboard intended for use in packaging, transporting, or holding food in accordance with the following prescribed conditions:

(e) The defoaming agents are used as follows:

1. The quantity of defoaming agent or agents used shall not exceed the amount reasonably required to accomplish the intended effect, which is to prevent or control the formation of foam.

2. The defoaming agents are used in the preparation and application of coatings for paper and paperboard.

(a) The defoaming agents are prepared from one or more of the substances named in paragraph (d) of this section, subject to any prescribed limitations.

(b) The defoaming agents are used to prevent or control the formation of foam during the manufacture of paper and paperboard prior to and during the sheet-forming process.

(c) The quantity of defoaming agent or agents added during the manufacturing process shall not exceed the amount necessary to accomplish the intended technical effect.

(d) Substances permitted to be used in the formulation of defoaming agents include substances subject to prior sanctions or approval for such use and employed subject to the conditions of such sanctions or approvals, substances generally recognized as safe for use in food, substances generally recognized as safe for use in paper, and petroleum waxes.

List of substances

<table>
<thead>
<tr>
<th>Substances</th>
<th>Limitations</th>
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</thead>
<tbody>
<tr>
<td>Polyethylene, oxidized.</td>
<td></td>
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<tr>
<td>Polyethylene glycol (200) diulurate.</td>
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<tr>
<td>Polyethylene glycol (400) dioleate.</td>
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<tr>
<td>Polyethylene glycol (600) dioleate.</td>
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<tr>
<td>Polyethylene glycol (400) esters of coconut oil fatty acids.</td>
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<tr>
<td>Polyethylene glycol (400) monoleate.</td>
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<tr>
<td>Polyethylene glycol (600) monoleate.</td>
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<tr>
<td>Polyethylene glycol (600) monoricinoleate.</td>
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<tr>
<td>Polyethylene glycol (400) monostearate.</td>
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<tr>
<td>Polyoxbutoxyolene-polyoxpropylene-polyoxethylene glycol (min. mol. wt. 3,700).</td>
<td>For use as preservative of defoamer only. Do.</td>
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<tr>
<td>Polyoxoxylethylated (min. 3 mols) cetyl alcohol.</td>
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<tr>
<td>Polyoxoxylethylated (min. 5 mols) oleyl alcohol.</td>
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<tr>
<td>Polyoxoxylethylated (min. 1.5 mols) tridecyl alcohol.</td>
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<tr>
<td>Polyoxoxylethylene (min. 15 mols) ester of rosin.</td>
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<tr>
<td>Polyoxoxylethylene (min. 8 mols) monoleate.</td>
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<tr>
<td>Polyoxoxylethylene (40) stearate.</td>
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<tr>
<td>Polyoxoxylethylene (20 mols) butyl alcohol.</td>
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<tr>
<td>Polyoxoxylethylene glycol (min. mol. wt. 200).</td>
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<tr>
<td>Polyoxoxylethylene (min. 20 mols) oleate butyl ether.</td>
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<tr>
<td>Polyoxoxylethylene-polyoxethylene glycol (min. mol. wt. 1,800).</td>
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<tr>
<td>Polyoxoxylethylene (40 mols) stearate butyl ether.</td>
<td></td>
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<tr>
<td>Potassium pentachlorophenate</td>
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<tr>
<td>Potassium trichlorophenate</td>
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<tr>
<td>Propylene glycol monoester of soybean oil fatty acids.</td>
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<tr>
<td>Propylene glycol monoester of tallow fatty acids.</td>
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<tr>
<td>Ricebran oil, sulfated, ammonium, potassium, or sodium salt.</td>
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<tr>
<td>Rosins and resin derivatives</td>
<td></td>
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<tr>
<td>Silica</td>
<td></td>
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<tr>
<td>Sodium 2-mercaptobenzothiazole</td>
<td></td>
</tr>
<tr>
<td>Sodium pentachlorophenate</td>
<td></td>
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<tr>
<td>Sodium trichlorophenate</td>
<td></td>
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<tr>
<td>Sperm oil, sulfated, ammonium, potassium, or sodium salt.</td>
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<tr>
<td>Stearyl alcohol</td>
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<tr>
<td>Tail oil fatty acids</td>
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<tr>
<td>Tallow fatty acids hydrogenated or sulfated</td>
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<tr>
<td>Tallow, sulfated, ammonium, potassium, or sodium salt.</td>
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<tr>
<td>Triethanolamine</td>
<td></td>
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<tr>
<td>Trisopropylamine</td>
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<tr>
<td>Waxes, petroleum</td>
<td></td>
</tr>
</tbody>
</table>

As provided in §178.3870 of this chapter.

For use as preservative of defoamer only. Do.

For use as preservative of defoamer only. Do.

For use as preservative of defoamer only. Do.

and substances listed in this paragraph, subject to the limitations, if any, prescribed.

(1) Fatty triglycerides, and the fatty acids, alcohols, and dimers derived therefrom:
- Beef tallow.
- Castor oil.
- Coconut oil.
- Corn oil.
- Cottonseed oil.
- Fish oil.
- Lard oil.
- Linseed oil.
- Mustardseed oil.
- Palm oil.
- Peanut oil.
- Rapeseed oil.
- Ricebran oil.
- Soybean oil.
- Sperm oil.
- Tall oil.

(2) Fatty triglycerides, and marine oils, and the fatty acids and alcohols derived therefrom (paragraph (d)(1) of this section) reacted with one or more of the following, with or without dehydration, to form chemicals of the category indicated in parentheses:
- Aluminum hydroxide (soaps).
- Ammonia (amides).
- Butanol (esters).
- Butoxy-polyoxypropylene, molecular weight 1,000–2,500 (esters).
- Butylene glycol (esters).
- Calcium hydroxide (soaps).
- Diethanolamine (amides).
- Diethylene glycol (esters).
- Ethylene glycol (esters).
- Ethylene oxide (esters and ethers).
- Glycerin (mono- and diglycerides).
- Hydrogen (hydrogenated compounds).
- Hydrogen (amines).
- Isobutanol (esters).
- Isopropanol (esters).
- Magnesium hydroxide (soaps).
- Methanol (esters).
- Morpholine (soaps).
- Oxygen (air-blown oils).
- Pentaerythritol (esters).
- Polyoxyethylene, molecular weights 200, 300, 400, 600, 700, 1,000, 1,540, 1,580, 1,760, 4,600 (esters).
- Polyoxypropylene, molecular weight 200–2,000 (esters).
- Potassium hydroxide (soaps).
- Propanol (esters).
- Propylene glycol (esters).
- Propylene oxide (esters).
- Sodium hydroxide (soaps).
- Sorbitol (esters).
- Sulfuric acid (sulfated and sulfonated compounds).
- Triethanolamine (amides and soaps).
- Triisopropanolamine (amides and soaps).
- Trimethylolethane (esters).
- Zinc hydroxide (soaps).

(3) Miscellaneous:
- Alcohols and ketone alcohols mixture (still-bottom product from C12–C18 alcohol manufacturing process).
- Amyl alcohol.
- Butoxy polyethylene polypropylene glycol molecular weight 900–4,200.
- Butoxy-polyoxypropylene molecular weight 1,000–2,500.
- Butylated hydroxyanisole.
- Butylated hydroxytoluene.
- Calcium lignin sulfonate.
- Capryl alcohol.
- p-Chlorometacresol.
- Cyclohexanol.
- Distearin fatty acid ester of tallow monoglyceride.
- 1,2-Dibromo-2,4-dicyanobutane (CAS Reg. No. 35691–65–7), for use as a preservative at a level not to exceed 0.05 weight-percent of the defoaming agent.
- Diethanolamine.
- Diethylene triamine.
- Di-(2-ethylhexyl) phthalate.
- 2,6-Dimethyl heptanol-4 (nonyl alcohol).
- Dimethylpolysiloxane.
- Di-tert-butyl hydroquinone.
- Dodecylbenzene sulfonic acids.
- Ethanol.
- 2-Ethylhexanol.
- Ethylenediamine tetraacetic acid tetrasodium salt.
- Formaldehyde.
- Heavy exo-fraction (a still-bottom product of iso-octyl alcohol manufacture, of approximate composition: Octyl alcohol 5 percent nonyl alcohol 10 percent, decyl and higher alcohols 35 percent, esters 45 percent, and soaps 5 percent).
- 2-Heptadecenyl-4-methyl-4-hydroxymethyl-2-oxazoline.
- Hexylene glycol (2-methyl-2-4-pentanediol).
- 12-Hydroxystearic acid.
- Isobutanol.
- Isopropanol.
- Isopropylamine salt of dodecylbenzene sulfonic acid.
- Kerosine.
- Lanolin.
- Methanol.
- Methyl 12-hydroxystearate.
- Methyl taurine-oleic acid condensate, molecular weight 486.
- a, a’-[Methylenebis(4-(1,1,3,3-tetramethylbutyl)-o-phenylene)]bis[omega-hydroxypropyloxyethylene] having 6–7.5 moles of ethylene oxide per hydroxyl group.
- Mineral oil.
- Mono-, di-, and trisopropanolamine.
- Mono- and dilauroylamine stearate.
- Monobutyl ether of ethylene glycol.
- Monoethanolamine.

§ 176.210

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Morpholine.
Myristyl alcohol.
Naphtha.
β-Naphthol.
Nonylphenol.
Odorless light petroleum hydrocarbons.
Oleyl alcohol.
Petrolatum.
α-Phenylenediamine.

**Polyethylene.**
Polyethylene, oxidized (air-blown).
Polymer derived from N-vinyl pyrrolidone and copolymers derived from the mixed alkyl (C12-C15, C16, C18, and C22) methacrylate esters, butyl methacrylate (CAS Reg. No. 97-88-1), isobutyl methacrylate (CAS Reg. No. 97-86-9) and methyl methacrylate (CAS Reg. No. 80-62-6); the combined polymer contains no more than 5 weight percent of polymer units derived from N-vinyl pyrrolidone and is present at a level not to exceed 7 parts per million by weight of the finished dry paper and paperboard fibers.
Polyoxyethylene (4 mols) decyl phosphate.
Polyoxyethylene (4 mols) di(2-ethyl hexanoate).
Polyoxyethylene (15 mols) ester of rosin.
Polyoxypropylene, molecular weight 200–2,000.
Polyoxypropylene-polyoxyethylene condensate, minimum molecular weight 950.
Polyoxymethylene oxide condensate of ethylene diamine, molecular weight 1,700-3,800.
Polyvinyl pyrrolidone, molecular weight 40,000.
Potassium distearyl phosphate.
Potassium pentachlorophenate.
Potassium trichlorophenate.
Rosins and rosin derivatives identified in § 175.105(c)(5) of this chapter.
Silica.
Silocones and silicones, dimethyl, methylhydrogenated, reaction products with polyethylene-polypropylene glycol monomethylether (CAS Reg. No. 71965-38-3).
Sodium alkyl (C8-C12) benzene-sulfonate.
Sodium dioctyl sulfosuccinate.
Sodium distearoyl phosphate.
Sodium lauryl sulfate.
Sodium lignin sulfonate.
Sodium 2-mercaptopbenzothiazole.
Sodium naphthalenesulfonic acid (3 mols) condensed with formaldehyde (2 mols).
Sodium orthophenylphenate.
Sodium pentachlorophenate.
Sodium petroleum sulfonate, molecular weight 440–450.
Sodium trichlorophenate.
Stearyl alcohol.

α-[p-(1,1,3,3-Tetramethylbutyl) phenyl-, p-nonylphenyl-, or p-dodecylphenyl]-omega-hydroxy(polyoxyethylene) produced by the condensation of 1 mole of p-alkylenphenol (alkyl group is 1,1,3,3-tetramethylbutyl, a propylene trimer isomer, or a propylene tetramer isomer) with an average of 1.5-15 moles of ethylene oxide.
Tetrahydrofurfuryl alcohol.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri-(2-ethylhexyl) phosphate.
Triolein.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Triethylene glycol di(2-ethyl hexanoate).
Tri(2-ethylhexyl) phosphate.
Tributyl phosphate.
Tridecyl alcohol.
Triethanolamine.
Polybutene, hydrogenated; complying with the identity prescribed under § 178.3740(b) of this chapter.