

(a) *Energy sources.* Ionizing radiation is limited to gamma rays from sealed units of cobalt-60.

(b) *Limitation.* The ionizing radiation is used for feed or feed ingredients that do not contain drugs.

(c) *Use.* Ionizing radiation is used as a single treatment for rendering complete poultry diets or poultry feed ingredients salmonella negative as follows:

(1) Minimum dose 2.0 kiloGrays (kGy) (0.2 megarad (Mrad)); maximum dose 25 kGy (2.5 megarads Mrad). The absorbed dose of irradiation is to be based on initial concentration of salmonella using the relationship that 1.0 kGy (0.1 Mrad) reduces salmonella concentration by one log cycle (one decimal reduction).

(2) Feeds treated by irradiation should be formulated to account for nutritional loss.

(3) If an irradiated feed ingredient is less than 5 percent of the final product, the final product can be irradiated without being considered to be re-irradiated.

[60 FR 50099, Sept. 28, 1995]

## PART 582—SUBSTANCES GENERALLY RECOGNIZED AS SAFE

### Subpart A—General Provisions

Sec.

- 582.1 Substances that are generally recognized as safe.
- 582.10 Spices and other natural seasonings and flavorings.
- 582.20 Essential oils, oleoresins (solvent-free), and natural extractives (including distillates).
- 582.30 Natural substances used in conjunction with spices and other natural seasonings and flavorings.
- 582.40 Natural extractives (solvent-free) used in conjunction with spices, seasonings, and flavorings.
- 582.50 Certain other spices, seasonings, essential oils, oleoresins, and natural extracts.
- 582.60 Synthetic flavoring substances and adjuvants.
- 582.80 Trace minerals added to animal feeds.
- 582.99 Adjuvants for pesticide chemicals.

### Subpart B—General Purpose Food Additives

- 582.1005 Acetic acid.
- 582.1009 Adipic acid.
- 582.1033 Citric acid.

- 582.1057 Hydrochloric acid.
- 582.1061 Lactic acid.
- 582.1069 Malic acid.
- 582.1073 Phosphoric acid.
- 582.1077 Potassium acid tartrate.
- 582.1087 Sodium acid pyrophosphate.
- 582.1091 Succinic acid.
- 582.1095 Sulfuric acid.
- 582.1099 Tartaric acid.
- 582.1125 Aluminum sulfate.
- 582.1127 Aluminum ammonium sulfate.
- 582.1129 Aluminum potassium sulfate.
- 582.1131 Aluminum sodium sulfate.
- 582.1135 Ammonium bicarbonate.
- 582.1137 Ammonium carbonate.
- 582.1139 Ammonium hydroxide.
- 582.1141 Ammonium phosphate.
- 582.1143 Ammonium sulfate.
- 582.1155 Bentonite.
- 582.1165 Butane.
- 582.1191 Calcium carbonate.
- 582.1193 Calcium chloride.
- 582.1195 Calcium citrate.
- 582.1199 Calcium gluconate.
- 582.1205 Calcium hydroxide.
- 582.1207 Calcium lactate.
- 582.1210 Calcium oxide.
- 582.1217 Calcium phosphate.
- 582.1235 Caramel.
- 582.1240 Carbon dioxide.
- 582.1275 Dextrans.
- 582.1320 Glycerin.
- 582.1324 Glyceryl monostearate.
- 582.1355 Helium.
- 582.1366 Hydrogen peroxide.
- 582.1400 Lecithin.
- 582.1425 Magnesium carbonate.
- 582.1428 Magnesium hydroxide.
- 582.1431 Magnesium oxide.
- 582.1480 Methylcellulose.
- 582.1500 Monoammonium glutamate.
- 582.1516 Monopotassium glutamate.
- 582.1540 Nitrogen.
- 582.1585 Papain.
- 582.1613 Potassium bicarbonate.
- 582.1619 Potassium carbonate.
- 582.1625 Potassium citrate.
- 582.1631 Potassium hydroxide.
- 582.1643 Potassium sulfate.
- 582.1655 Propane.
- 582.1666 Propylene glycol.
- 582.1685 Rennet.
- 582.1711 Silica aerogel.
- 582.1721 Sodium acetate.
- 582.1736 Sodium bicarbonate.
- 582.1742 Sodium carbonate.
- 582.1745 Sodium carboxymethylcellulose.
- 582.1748 Sodium caseinate.
- 582.1751 Sodium citrate.
- 582.1763 Sodium hydroxide.
- 582.1775 Sodium pectinate.
- 582.1778 Sodium phosphate.
- 582.1781 Sodium aluminum phosphate.
- 582.1792 Sodium sesquicarbonate.
- 582.1804 Sodium potassium tartrate.
- 582.1810 Sodium tripolyphosphate.
- 582.1901 Triacetin.

582.1973 Beeswax.  
582.1975 Bleached beeswax.  
582.1978 Carnauba wax.

#### Subpart C—Anticaking Agents

582.2122 Aluminum calcium silicate.  
582.2227 Calcium silicate.  
582.2437 Magnesium silicate.  
582.2727 Sodium aluminosilicate.  
582.2729 Hydrated sodium calcium aluminosilicate.  
582.2906 Tricalcium silicate.

#### Subpart D—Chemical Preservatives

582.3013 Ascorbic acid.  
582.3021 Benzoic acid.  
582.3041 Erythorbic acid.  
582.3081 Propionic acid.  
582.3089 Sorbic acid.  
582.3109 Thiodipropionic acid.  
582.3149 Ascorbyl palmitate.  
582.3169 Butylated hydroxyanisole.  
582.3173 Butylated hydroxytoluene.  
582.3189 Calcium ascorbate.  
582.3221 Calcium propionate.  
582.3225 Calcium sorbate.  
582.3280 Dilauryl thiodipropionate.  
582.3336 Gum guaiac.  
582.3490 Methylparaben.  
582.3616 Potassium bisulfite.  
582.3637 Potassium metabisulfite.  
582.3640 Potassium sorbate.  
582.3660 Propyl gallate.  
582.3670 Propylparaben.  
582.3731 Sodium ascorbate.  
582.3733 Sodium benzoate.  
582.3739 Sodium bisulfite.  
582.3766 Sodium metabisulfite.  
582.3784 Sodium propionate.  
582.3795 Sodium sorbate.  
582.3798 Sodium sulfite.  
582.3845 Stannous chloride.  
582.3862 Sulfur dioxide.  
582.3890 Tocopherols.

#### Subpart E—Emulsifying Agents

582.4101 Diacetyl tartaric acid esters of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.  
582.4505 Mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.  
582.4521 Monosodium phosphate derivatives of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.  
582.4666 Propylene glycol.

#### Subpart F—Nutrients and/or Dietary Supplements

582.5013 Ascorbic acid.  
582.5017 Aspartic acid.  
582.5049 Aminoacetic acid.  
582.5065 Linoleic acid.  
582.5118 Alanine.  
582.5145 Arginine.

582.5159 Biotin.  
582.5191 Calcium carbonate.  
582.5195 Calcium citrate.  
582.5201 Calcium glycerophosphate.  
582.5210 Calcium oxide.  
582.5212 Calcium pantothenate.  
582.5217 Calcium phosphate.  
582.5223 Calcium pyrophosphate.  
582.5230 Calcium sulfate.  
582.5245 Carotene.  
582.5250 Choline bitartrate.  
582.5252 Choline chloride.  
582.5260 Copper gluconate.  
582.5271 Cysteine.  
582.5273 Cystine.  
582.5301 Ferric phosphate.  
582.5304 Ferric pyrophosphate.  
582.5306 Ferric sodium pyrophosphate.  
582.5308 Ferrous gluconate.  
582.5311 Ferrous lactate.  
582.5315 Ferrous sulfate.  
582.5361 Histidine.  
582.5370 Inositol.  
582.5375 Iron reduced.  
582.5381 Isoleucine.  
582.5406 Leucine.  
582.5411 Lysine.  
582.5431 Magnesium oxide.  
582.5434 Magnesium phosphate.  
582.5443 Magnesium sulfate.  
582.5446 Manganese chloride.  
582.5449 Manganese citrate.  
582.5452 Manganese gluconate.  
582.5455 Manganese glycerophosphate.  
582.5458 Manganese hypophosphite.  
582.5461 Manganese sulfate.  
582.5464 Manganous oxide.  
582.5470 Mannitol.  
582.5475 Methionine.  
582.5477 Methionine hydroxy analog and its calcium salts.  
582.5530 Niacin.  
582.5535 Niacinamide.  
582.5580 D-Pantothenyl alcohol.  
582.5590 Phenylalanine.  
582.5622 Potassium chloride.  
582.5628 Potassium glycerophosphate.  
582.5634 Potassium iodide.  
582.5650 Proline.  
582.5676 Pyridoxine hydrochloride.  
582.5695 Riboflavin.  
582.5697 Riboflavin-5-phosphate.  
582.5701 Serine.  
582.5772 Sodium pantothenate.  
582.5778 Sodium phosphate.  
582.5835 Sorbitol.  
582.5875 Thiamine hydrochloride.  
582.5878 Thiamine mononitrate.  
582.5881 Threonine.  
582.5890 Tocopherols.  
582.5892 *a*-Tocopherol acetate.  
582.5915 Tryptophane.  
582.5920 Tyrosine.  
582.5925 Valine.  
582.5930 Vitamin A.  
582.5933 Vitamin A acetate.  
582.5936 Vitamin A palmitate.

582.5945	Vitamin B <sub>12</sub> .
582.5950	Vitamin D <sub>2</sub> .
582.5953	Vitamin D <sub>3</sub> .
582.5985	Zinc chloride.
582.5988	Zinc gluconate.
582.5991	Zinc oxide.
582.5994	Zinc stearate.
582.5997	Zinc sulfate.

**Subpart G—Sequestrants**

582.6033	Citric acid.
582.6085	Sodium acid phosphate.
582.6099	Tartaric acid.
582.6185	Calcium acetate.
582.6193	Calcium chloride.
582.6195	Calcium citrate.
582.6197	Calcium diacetate.
582.6199	Calcium gluconate.
582.6203	Calcium hexametaphosphate.
582.6215	Monobasic calcium phosphate.
582.6219	Calcium phytate.
582.6285	Dipotassium phosphate.
582.6290	Disodium phosphate.
582.6386	Isopropyl citrate.
582.6511	Monoisopropyl citrate.
582.6625	Potassium citrate.
582.6751	Sodium citrate.
582.6754	Sodium diacetate.
582.6757	Sodium gluconate.
582.6760	Sodium hexametaphosphate.
582.6769	Sodium metaphosphate.
582.6778	Sodium phosphate.
582.6787	Sodium pyrophosphate.
582.6789	Tetra sodium pyrophosphate.
582.6801	Sodium tartrate.
582.6804	Sodium potassium tartrate.
582.6807	Sodium thiosulfate.
582.6810	Sodium tripolyphosphate.
582.6851	Stearyl citrate.

**Subpart H—Stabilizers**

582.7115	Agar-agar.
582.7133	Ammonium alginate.
582.7187	Calcium alginate.
582.7255	Chondrus extract.
582.7330	Gum arabic.
582.7333	Gum ghatti.
582.7339	Guar gum.
582.7343	Locust bean gum.
582.7349	Sterculia gum.
582.7351	Gum tragacanth.
582.7610	Potassium alginate.
582.7724	Sodium alginate.

AUTHORITY: 21 U.S.C. 321, 342, 348, 371.

SOURCE: 41 FR 38657, Sept. 10, 1976, unless otherwise noted.

**Subpart A—General Provisions****§ 582.1 Substances that are generally recognized as safe.**

(a) It is impracticable to list all substances that are generally recognized

as safe for their intended use. However, by way of illustration, the Commissioner regards such common food ingredients as salt, pepper, sugar, vinegar, baking powder, and monosodium glutamate as safe for their intended use. The lists in subparts B through H of this part include additional substances that, when used for the purposes indicated, in accordance with good manufacturing or feeding practice, are regarded by the Commissioner as generally recognized as safe for such uses.

(b) For the purposes of this section, good manufacturing or feeding practice shall be defined to include the following restrictions:

(1) The quantity of a substance added to animal food does not exceed the amount reasonably required to accomplish its intended physical, nutritional, or other technical effect in food; and

(2) The quantity of a substance that becomes a component of animal food as a result of its use in the manufacturing, processing, or packaging of food, and which is not intended to accomplish any physical or other technical effect in the food itself, shall be reduced to the extent reasonably possible.

(3) The substance is of appropriate grade and is prepared and handled as a food ingredient. Upon request the Commissioner will offer an opinion, based on specifications and intended use, as to whether or not a particular grade or lot of the substance is of suitable purity for use in food and would generally be regarded as safe for the purpose intended, by experts qualified to evaluate its safety.

(c) The inclusion of substances in the list of nutrients does not constitute a finding on the part of the Department that the substance is useful as a supplement to the diet for animals.

(d) Substances that are generally recognized as safe for their intended use within the meaning of section 409 of the Act are listed in subparts B through H of this part. When the status of a substance has been reevaluated and affirmed as GRAS or deleted from subparts B through H of this part, an appropriate explanation will be noted,

e.g., “affirmed as GRAS,” “food additive regulation,” “interim food additive regulation,” or “prohibited from use in food,” with a reference to the appropriate new regulation. Such notation will apply only to the specific use covered by the review, e.g., direct animal food use and/or indirect animal food use and/or animal feed use and will not affect its status for other uses not specified in the referenced regula-

tion, pending a specific review of such other uses.

**§ 582.10 Spices and other natural seasonings and flavorings.**

Spices and other natural seasonings and flavorings that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

Common name	Botanical name of plant source
Alfalfa herb and seed .....	<i>Medicago sativa</i> L.
Allspice .....	<i>Pimenta officinalis</i> Lindl.
Ambrette seed .....	<i>Hibiscus abelmoschus</i> L.
Angelica .....	<i>Angelica archangelica</i> L. or other spp. of <i>Angelica</i> .
Angelica root .....	Do.
Angelica seed .....	Do.
Angostura (cusparia bark) .....	<i>Galipea officinalis</i> Hancock.
Anise .....	<i>Pimpinella anisum</i> L.
Anise, star .....	<i>Illicium verum</i> Hook. f.
Balm (lemon balm) .....	<i>Melissa officinalis</i> L.
Basil, bush .....	<i>Ocimum minimum</i> L.
Basil, sweet .....	<i>Ocimum basilicum</i> L.
Bay .....	<i>Laurus nobilis</i> L.
Calendula .....	<i>Calendula officinalis</i> L.
Camomile (chamomile), English or Roman .....	<i>Anthemis nobilis</i> L.
Camomile (chamomile), German or Hungarian .....	<i>Matricaria chamomilla</i> L.
Capers .....	<i>Capparis spinosa</i> L.
Capsicum .....	<i>Capsicum frutescens</i> L. or <i>Capsicum annuum</i> L.
Caraway .....	<i>Carum carvi</i> L.
Caraway, black (black cumin) .....	<i>Nigella sativa</i> L.
Cardamom (cardamon) .....	<i>Elettaria cardamomum</i> Maton.
Cassia, Chinese .....	<i>Cinnamomum cassia</i> Blume.
Cassia, Padang or Batavia .....	<i>Cinnamomum burmanni</i> Blume.
Cassia, Saigon .....	<i>Cinnamomum loureirii</i> Nees.
Cayenne pepper .....	<i>Capsicum frutescens</i> L. or <i>Capsicum annuum</i> L.
Celery seed .....	<i>Apium graveolens</i> L.
Chervil .....	<i>Anthriscus cerefolium</i> (L.) Hoffm.
Chives .....	<i>Allium schoenoprasum</i> L.
Cinnamon, Ceylon .....	<i>Cinnamomum zeylanicum</i> Nees.
Cinnamon, Chinese .....	<i>Cinnamomum cassia</i> Blume.
Cinnamon, Saigon .....	<i>Cinnamomum loureirii</i> Nees.
Clary (clary sage) .....	<i>Salvia sclarea</i> L.
Clover .....	<i>Trifolium</i> spp.
Cloves .....	<i>Eugenia caryophyllata</i> Thunb.
Coriander .....	<i>Coriandrum sativum</i> L.
Cumin (cummin) .....	<i>Cuminum cyminum</i> L.
Cumin, black (black caraway) .....	<i>Nigella sativa</i> L.
Dill .....	<i>Anethum graveolens</i> L.
Elder flowers .....	<i>Sambucus canadensis</i> L.
Fennel, common .....	<i>Foeniculum vulgare</i> Mill.
Fennel, sweet (finocchio, Florence fennel) .....	<i>Foeniculum vulgare</i> Mill. var. <i>duice</i> (DC.) Alex.
Fenugreek .....	<i>Trigonella foenum-graecum</i> L.
Galanga (galangal) .....	<i>Alpina officinarum</i> Hance.
Garlic .....	<i>Allium sativum</i> L.
Geranium .....	<i>Pelargonium</i> spp.
Ginger .....	<i>Zingiber officinale</i> Rosc.
Glycyrrhiza .....	<i>Glycyrrhiza glabra</i> L. and other spp. of <i>Glycyrrhiza</i> .
Grains of paradise .....	<i>Amomum melegueta</i> Rosc.
Horehound (hoarhound) .....	<i>Marrubium vulgare</i> L.
Horseradish .....	<i>Armoracia lappathifolia</i> Gilib.
Hyssop .....	<i>Hyssopus officinalis</i> L.
Lavender .....	<i>Lavandula officinalis</i> Chaix.
Licorice .....	<i>Glycyrrhiza glabra</i> L. and other spp. of <i>Glycyrrhiza</i> .
Linden flowers .....	<i>Tilia</i> spp.
Mace .....	<i>Myristica fragrans</i> Houtt.
Marigold, pot .....	<i>Calendula officinalis</i> L.
Marjoram, pot .....	<i>Majorana onites</i> (L.) Benth.
Marjoram, sweet .....	<i>Majorana hortensis</i> Moench.
Mustard, black or brown .....	<i>Brassica nigra</i> (L.) Koch.

Common name	Botanical name of plant source
Mustard, brown	<i>Brassica juncea</i> (L.) Coss.
Mustard, white or yellow	<i>Brassica hirta</i> Moench.
Nutmeg	<i>Myristica fragrans</i> Houtt.
Oregano (oreganum, Mexican oregano, Mexican sage, origan)	<i>Lippia</i> spp.
Paprika	<i>Capsicum annuum</i> L.
Parsley	<i>Petroselinum crispum</i> (Mill.) Mansf.
Pepper, black	<i>Piper nigrum</i> L.
Pepper, cayenne	<i>Capsicum frutescens</i> L. or <i>Capsicum annuum</i> L.
Pepper, red	Do.
Pepper, white	<i>Piper nigrum</i> L.
Peppermint	<i>Mentha piperita</i> L.
Poppy seed	<i>Papaver somniferum</i> L.
Pot marigold	<i>Calendula officinalis</i> L.
Pot marjoram	<i>Majorana onites</i> (L.) Benth.
Rosemary	<i>Rosmarinus officinalis</i> L.
Rue	<i>Ruta graveolens</i> L.
Saffron	<i>Crocus sativus</i> L.
Sage	<i>Salvia officinalis</i> L.
Sage, Greek	<i>Salvia triloba</i> L.
Savory, summer	<i>Satureia hortensis</i> L. (Satureja).
Savory, winter	<i>Satureia montana</i> L. (Satureja).
Sesame	<i>Sesamum indicum</i> L.
Spearmint	<i>Mentha spicata</i> L.
Star anise	<i>Illicium verum</i> Hook. f.
Tarragon	<i>Artemisia dracunculus</i> L.
Thyme	<i>Thymus vulgaris</i> L.
Thyme, wild or creeping	<i>Thymus serpyllum</i> L.
Turmeric	<i>Curcuma longa</i> L.
Vanilla	<i>Vanilla planifolia</i> Andr. or <i>Vanilla tahitensis</i> J. W. Moore.
Zedoary	<i>Curcuma zedoaria</i> Rosc.

**§ 582.20 Essential oils, oleoresins (solvent-free), and natural extractives (including distillates).**

Essential oils, oleoresins (solvent-free), and natural extractives (includ-

ing distillates) that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

Common name	Botanical name of plant source
Alfalfa	<i>Medicago sativa</i> L.
Allspice	<i>Pimenta officinalis</i> Lindl.
Almond, bitter (free from prussic acid)	<i>Prunus amygdalus</i> Batsch, <i>Prunus armeniaca</i> L. or <i>Prunus persica</i> (L.) Batsch.
Ambrette (seed)	<i>Hibiscus moschatus</i> Moench.
Angelica root	<i>Angelica archangelica</i> L.
Angelica seed	Do.
Angelica stem	Do.
Angostura (cusparia bark)	<i>Galipea officinalis</i> Hancock.
Anise	<i>Pimpinella anisum</i> L.
Asafetida	<i>Ferula assa-foetida</i> L. and related spp. of <i>Ferula</i> .
Balm (lemon balm)	<i>Melissa officinalis</i> L.
Balsam of Peru	<i>Myroxylon pereirae</i> Klotzsch.
Basil	<i>Ocimum basilicum</i> L.
Bay leaves	<i>Laurus nobilis</i> L.
Bay (myrcia oil)	<i>Pimenta racemosa</i> (Mill.) J. W. Moore.
Bergamot (bergamot orange)	<i>Citrus aurantium</i> L. subsp. <i>bergamia</i> Wright et Arn.
Bitter almond (free from prussic acid)	<i>Prunus amygdalus</i> Batsch, <i>Prunus armeniaca</i> L., or <i>Prunus persica</i> (L.) Batsch.
Bois de rose	<i>Aniba rosaeodora</i> Ducke.
Cacao	<i>Theobroma cacao</i> L.
Camomile (chamomile) flowers, Hungarian	<i>Matricaria chamomilla</i> L.
Camomile (chamomile) flowers, Roman or English	<i>Anthemis nobilis</i> L.
Cananga	<i>Cananga odorata</i> Hook. f. and Thoms.
Capsicum	<i>Capsicum frutescens</i> L. and <i>Capsicum annuum</i> L.
Caraway	<i>Carum carvi</i> L.
Cardamom seed (cardamon)	<i>Elettaria cardamomum</i> Maton.
Carob bean	<i>Ceratonia siliqua</i> L.
Carrot	<i>Daucus carota</i> L.
Cascarilla bark	<i>Croton eluteria</i> Benn.
Cassia bark, Chinese	<i>Cinnamomum cassia</i> Blume.

Common name	Botanical name of plant source
Cassia bark, Padang or Batavia	<i>Cinnamomum burmanni</i> Blume.
Cassia bark, Saigon	<i>Cinnamomum loureirii</i> Nees.
Celery seed	<i>Apium graveolens</i> L.
Cherry, wild, bark	<i>Prunus serotina</i> Ehrh.
Chervil	<i>Anthriscus cerefolium</i> (L.) Hoffm.
Chicory	<i>Cichorium intybus</i> L.
Cinnamon bark, Ceylon	<i>Cinnamomum zeylanicum</i> Nees.
Cinnamon bark, Chinese	<i>Cinnamomum cassia</i> Blume.
Cinnamon bark, Saigon	<i>Cinnamomum loureirii</i> Nees.
Cinnamon leaf, Ceylon	<i>Cinnamomum zeylanicum</i> Nees.
Cinnamon leaf, Chinese	<i>Cinnamomum cassia</i> Blume.
Cinnamon leaf, Saigon	<i>Cinnamomum loureirii</i> Nees.
Citronella	<i>Cymbopogon nardus</i> Rendle.
Citrus peels	<i>Citrus</i> spp.
Clary (clary sage)	<i>Salvia sclarea</i> L.
Clove bud	<i>Eugenia caryophyllata</i> Thunb.
Clove leaf	Do.
Clove stem	Do.
Clover	<i>Trifolium</i> spp.
Coca (decocainized)	<i>Erythroxylum coca</i> Lam. and other spp. of <i>Erythroxylum</i> .
Coffee	<i>Coffea</i> spp.
Cola nut	<i>Cola acuminata</i> Schott and Endl., and other spp. of <i>Cola</i> .
Coriander	<i>Coriandrum sativum</i> L.
Corn silk	<i>Zea mays</i> L.
Cumin (cummin)	<i>Cuminum cyminum</i> L.
Curacao orange peel (orange, bitter peel)	<i>Citrus aurantium</i> L.
Cusparia bark	<i>Galipea officinalis</i> Hancock.
Dandelion	<i>Taraxacum officinale</i> Weber and <i>T. laevigatum</i> DC.
Dandelion root	Do.
Dill	<i>Anethum graveolens</i> L.
Dog grass (quackgrass, triticum)	<i>Agropyron repens</i> (L.) Beauv.
Elder flowers	<i>Sambucus canadensis</i> L. and <i>S. nigra</i> L.
Estragole (esdragol, esdragon, tarragon)	<i>Artemisia dracunculus</i> L.
Estragon (tarragon)	Do.
Fennel, sweet	<i>Foeniculum vulgare</i> Mill.
Fenugreek	<i>Trigonella foenum-graecum</i> L.
Galanga (galangal)	<i>Alpinia officinarum</i> Hance.
Garlic	<i>Allium sativum</i> L.
Geranium	<i>Pelargonium</i> spp.
Geranium, East Indian	<i>Cymbopogon martini</i> Stapf.
Geranium, rose	<i>Pelargonium graveolens</i> L'Her.
Ginger	<i>Zingiber officinale</i> Rosc.
Glycyrrhiza	<i>Glycyrrhiza glabra</i> L. and other spp. of <i>Glycyrrhiza</i> .
Glycyrrhizin, ammoniated	Do.
Grapefruit	<i>Citrus paradisi</i> Macf.
Guava	<i>Psidium</i> spp.
Hickory bark	<i>Carya</i> spp.
Horehound (hoarhound)	<i>Marrubium vulgare</i> L.
Hops	<i>Humulus lupulus</i> L.
Horsemint	<i>Monarda punctata</i> L.
Hyssop	<i>Hyssopus officinalis</i> L.
Immortelle	<i>Helichrysum augustifolium</i> DC.
Jasmine	<i>Jasminum officinale</i> L. and other spp. of <i>Jasminum</i> .
Juniper (berries)	<i>Juniperus communis</i> L.
Kola nut	<i>Cola acuminata</i> Schott and Endl., and other spp. of <i>Cola</i> .
Laurel berries	<i>Laurus nobilis</i> L.
Laurel leaves	<i>Laurus</i> spp.
Lavender	<i>Lavandula officinalis</i> Chaix.
Lavender, spike	<i>Lavandula latifolia</i> Vill.
Lavandin	Hybrids between <i>Lavandula officinalis</i> Chaix and <i>Lavandula latifolia</i> Vill.
Lemon	<i>Citrus limon</i> (L.) Burm. f.
Lemon balm (see balm).	
Lemon grass	<i>Cymbopogon citratus</i> DC. and <i>Cymbopogon flexuosus</i> Stapf.
Lemon peel	<i>Citrus limon</i> (L.) Burm. f.
Licorice	<i>Glycyrrhiza glabra</i> L. and other spp. of <i>Glycyrrhiza</i> .
Lime	<i>Citrus aurantifolia</i> Swingle.
Linden flowers	<i>Tilia</i> spp.
Locust bean	<i>Ceratonia siliqua</i> L.
Lupulin	<i>Humulus lupulus</i> L.
Mace	<i>Myristica fragrans</i> Houtt.
Malt (extract)	<i>Hordeum vulgare</i> L., or other grains.
Mandarin	<i>Citrus reticulata</i> Blanco.
Marjoram, sweet	<i>Majorana hortensis</i> Moench.

Common name	Botanical name of plant source
Mate 1 .....	<i>Ilex paraguariensis</i> St. Hil.
Melissa (see balm) .....	
Menthol .....	<i>Mentha</i> spp.
Menthyl acetate .....	Do.
Molasses (extract) .....	<i>Saccharum officinarum</i> L.
Mustard .....	<i>Brassica</i> spp.
Naringin .....	<i>Citrus paradisi</i> Macf.
Neroli, bigarade .....	<i>Citrus aurantium</i> L.
Nutmeg .....	<i>Myristica fragrans</i> Houtt.
Onion .....	<i>Allium cepa</i> L.
Orange, bitter, flowers .....	<i>Citrus aurantium</i> L.
Orange, bitter, peel .....	Do.
Orange leaf .....	<i>Citrus sinensis</i> (L.) Osbeck.
Orange, sweet .....	Do.
Orange, sweet, flowers .....	Do.
Orange, sweet, peel .....	Do.
Origanum .....	<i>Origanum</i> spp.
Palmarosa .....	<i>Cymbopogon martini</i> Stapf.
Paprika .....	<i>Capsicum annuum</i> L.
Parsley .....	<i>Petroselinum crispum</i> (Mill.) Mansf.
Pepper, black .....	<i>Piper nigrum</i> L.
Pepper, white .....	<i>Piper nigrum</i> L.
Peppermint .....	<i>Mentha piperita</i> L.
Peruvian balsam .....	<i>Myroxylon pereirae</i> Klotzsch.
Petitgrain .....	<i>Citrus aurantium</i> L.
Petitgrain lemon .....	<i>Citrus limon</i> (L.) Burm. f.
Petitgrain mandarin or tangerine .....	<i>Citrus reticulata</i> Blanco.
Pimenta .....	<i>Pimenta officinalis</i> Lindl.
Pimenta leaf .....	<i>Pimenta officinalis</i> Lindl.
Pipsissewa leaves .....	<i>Chimaphila umbellata</i> Nutt.
Pomegranate .....	<i>Punica granatum</i> L.
Prickly ash bark .....	<i>Xanthoxylum</i> (or <i>Zanthoxylum</i> ) <i>Americanum</i> Mill. or <i>Xanthoxylum clava-herculis</i> L.
Rose absolute .....	<i>Rosa alba</i> L., <i>Rosa centifolia</i> L., <i>Rosa damascena</i> Mill., <i>Rosa gallica</i> L., and vars. of these spp.
Rose (otto of roses, attar of roses) .....	Do.
Rose buds .....	Do.
Rose flowers .....	Do.
Rose fruit (hips) .....	Do.
Rose geranium .....	<i>Pelargonium graveolens</i> L'Her.
Rose leaves .....	<i>Rosa</i> spp.
Rosemary .....	<i>Rosmarinus officinalis</i> L.
Rue .....	<i>Ruta graveolens</i> L.
Saffron .....	<i>Crocus sativus</i> L.
Sage .....	<i>Salvia officinalis</i> L.
Sage, Greek .....	<i>Salvia triloba</i> L.
Sage, Spanish .....	<i>Salvia lavandulaefolia</i> Vahl.
St. John's bread .....	<i>Ceratonja siliqua</i> L.
Savory, summer .....	<i>Satureia hortensis</i> L.
Savory, winter .....	<i>Satureia montana</i> L.
Schinus molle .....	<i>Schinus molle</i> L.
Sloe berries (blackthorn berries) .....	<i>Prunus spinosa</i> L.
Spearmint .....	<i>Mentha spicata</i> L.
Spike lavender .....	<i>Lavandula latifolia</i> Vill.
Tamarind .....	<i>Tamarindus indica</i> L.
Tangerine .....	<i>Citrus reticulata</i> Blanco.
Tannic acid .....	Nutgalls of <i>Quercus infectoria</i> Oliver and related spp. of <i>Quercus</i> . Also in many other plants.
Tarragon .....	<i>Artemisia dracunculus</i> L.
Tea .....	<i>Thea sinensis</i> L.
Thyme .....	<i>Thymus vulgaris</i> L. and <i>Thymus zygis</i> var. <i>gracilis</i> Boiss.
Thyme, white .....	Do.
Thyme, wild or creeping .....	<i>Thymus serpyllum</i> L.
Triticum (see dog grass) .....	
Tuberose .....	<i>Polygonum tuberosum</i> L.
Turmeric .....	<i>Curcuma longa</i> L.
Vanilla .....	<i>Vanilla planifolia</i> Andr. or <i>Vanilla tahitensis</i> J. W. Moore.
Violet flowers .....	<i>Viola odorata</i> L.
Violet leaves .....	Do.
Violet leaves absolute .....	Do.
Wild cherry bark .....	<i>Prunus serotina</i> Ehrh.
Ylang-ylang .....	<i>Cananga odorata</i> Hook. f. and Thoms.
Zedoary bark .....	<i>Curcuma zedoaria</i> Rosc.

**§ 582.30 Natural substances used in conjunction with spices and other natural seasonings and flavorings.**

Natural substances used in conjunction with spices and other natural

seasonings and flavorings that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

Common name	Botanical name of plant source
Algae, brown (kelp) .....	<i>Laminaria</i> spp. and <i>Nereocystis</i> spp.
Algae, red .....	<i>Porphyra</i> spp. and <i>Rhodomenia palmata</i> (L.) Grev.
Dulse .....	<i>Rhodomenia palmata</i> (L.)

**§ 582.40 Natural extractives (solvent-free) used in conjunction with spices, seasonings, and flavorings.**

Natural extractives (solvent-free) used in conjunction with spices,

seasonings, and flavorings that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

Common name	Botanical name of plant source
Algae, brown .....	<i>Laminaria</i> spp. and <i>Nereocystis</i> spp.
Algae, red .....	<i>Porphyra</i> spp. and <i>Rhodomenia palmata</i> (L.) Grev.
Apricot kernel (persic oil) .....	<i>Prunus armeniaca</i> L.
Dulse .....	<i>Rhodomenia palmata</i> (L.) Grev.
Kelp (see algae, brown).	
Peach kernel (persic oil) .....	<i>Prunus persica</i> Sieb. et Zucc.
Peanut stearine .....	<i>Arachis hypogaea</i> L.
Persic oil (see apricot kernel and peach kernel).	
Quince seed .....	<i>Cydonia oblonga</i> Miller.

**§ 582.50 Certain other spices, seasonings, essential oils, oleoresins, and natural extracts.**

Certain other spices, seasonings, essential oils, oleoresins, and natural ex-

tracts that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

Common name	Derivation
Ambergris .....	<i>Physeter macrocephalus</i> L.
Castoreum .....	Castor fiber L. and <i>C. canadensis</i> Kuhl.
Civet (zibeth, zibet, zibetum) .....	Civet cats, <i>Viverra civetta</i> Schreber and <i>Viverra zibetha</i> Schreber.
Cognac oil, white and green .....	<i>Ethyl oenanthate</i> , so-called.
Musk (Tonquin musk) .....	Musk deer, <i>Moschus moschiferus</i> L.

**§ 582.60 Synthetic flavoring substances and adjuvants.**

Synthetic flavoring substances and adjuvants that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

- Acetaldehyde (ethanal).
- Acetoin (acetyl methylcarbinol).
- Aconitic acid (equisetic acid, citridic acid, achilleic acid).
- Anethole (parapropenyl anisole).
- Benzaldehyde (benzoic aldehyde).
- N-Butyric acid (butanoic acid).
- d- or l-Carvone (carvol).

- Cinnamaldehyde (cinnamic aldehyde).
- Citral (2,6-dimethyloctadien-2,6-a1-8, geranial, neral).
- Decanal (N-decylaldehyde, capraldehyde, capric aldehyde, caprinaldehyde, aldehyde C-10).
- Diacetyl (2,3-butandione). Ethyl acetate. Ethyl butyrate.
- 3-Methyl-3-phenyl glycidic acid ethyl ester (ethyl-methyl-phenyl-glycidate, so-called strawberry aldehyde, C-16 aldehyde).
- Ethyl vanillin.
- Eugenol.
- Geranoil (3,7-dimethyl-2,6 and 3,6-octadien-1-ol).
- Geranyl acetate (geraniol acetate).

Glycerol (glyceryl) tributyrate (tributyryn, butyryn).  
 Limonene (*d*-, *l*-, and *dl*-).  
 Linalool (linalol, 3,7-dimethyl-1,6-octadien-3-*ol*).  
 Linalyl acetate (bergamol).  
 1-Malic acid.  
 Methyl anthranilate (methyl-2-aminobenzoate).  
 Piperonal (3,4-methylenedioxy-benzaldehyde, heliotropin).  
 Vanillin.

**§ 582.80 Trace minerals added to animal feeds.**

These substances added to animal feeds as nutritional dietary supplements are generally recognized as safe when added at levels consistent with good feeding practice.<sup>1</sup>

Element	Source compounds
Cobalt .....	Cobalt acetate. Cobalt carbonate. Cobalt chloride. Cobalt oxide. Cobalt sulfate.
Copper .....	Copper carbonate. Copper chloride. Copper gluconate. Copper hydroxide. Copper orthophosphate. Copper oxide. Copper pyrophosphate. Copper sulfate.
Iodine .....	Calcium iodate. Calcium iodobenenate. Cuprous iodide. 3,5-Diiodosalicylic acid. Ethylenediamine dihydroiodide. Potassium iodate. Potassium iodide. Sodium iodate. Sodium iodide. Thymol iodide.
Iron .....	Iron ammonium citrate. Iron carbonate. Iron chloride. Iron gluconate. Iron oxide. Iron phosphate. Iron pyrophosphate. Iron sulfate. Reduced iron.
Manganese .....	Manganese acetate. Manganese carbonate. Manganese citrate (soluble). Manganese chloride. Manganese gluconate. Manganese orthophosphate. Manganese phosphate (dibasic). Manganese sulfate. Manganous oxide.
Zinc .....	Zinc acetate. Zinc carbonate. Zinc chloride. Zinc oxide.

<sup>1</sup>All substances listed may be in anhydrous or hydrated form.

Element	Source compounds
	Zinc sulfate.

**§ 582.99 Adjuvants for pesticide chemicals.**

Adjuvants, identified and used in accordance with 40 CFR 180.1001(c) and (d), which are added to pesticide use dilutions by a grower or applicator prior to application to the raw agricultural commodity, are exempt from the requirement of tolerances under section 409 of the act.

**Subpart B—General Purpose Food Additives**

**§ 582.1005 Acetic acid.**

- (a) *Product.* Acetic acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1009 Adipic acid.**

- (a) *Product.* Adipic acid.
- (b) [Reserved]
- (c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used as a buffer and neutralizing agent in accordance with good manufacturing or feeding practice.

**§ 582.1033 Citric acid.**

- (a) *Product.* Citric acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1057 Hydrochloric acid.**

- (a) *Product.* Hydrochloric acid.
- (b) [Reserved]
- (c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used as a buffer and neutralizing agent in accordance with good manufacturing or feeding practice.

**§ 582.1061 Lactic acid.**

- (a) *Product.* Lactic acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1069 Malic acid.**

- (a) *Product.* Malic acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1073 Phosphoric acid.**

- (a) *Product.* Phosphoric acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1077 Potassium acid tartrate.**

- (a) *Product.* Potassium acid tartrate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1087 Sodium acid pyrophosphate.**

- (a) *Product.* Sodium acid pyrophosphate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1091 Succinic acid.**

- (a) *Product.* Succinic acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1095 Sulfuric acid.**

- (a) *Product.* Sulfuric acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1099 Tartaric acid.**

- (a) *Product.* Tartaric acid.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1125 Aluminum sulfate.**

- (a) *Product.* Aluminum sulfate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1127 Aluminum ammonium sulfate.**

- (a) *Product.* Aluminum ammonium sulfate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1129 Aluminum potassium sulfate.**

- (a) *Product.* Aluminum potassium sulfate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1131 Aluminum sodium sulfate.**

- (a) *Product.* Aluminum sodium sulfate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1135 Ammonium bicarbonate.**

- (a) *Product.* Ammonium bicarbonate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1137 Ammonium carbonate.**

- (a) *Product.* Ammonium carbonate.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1139 Ammonium hydroxide.**

- (a) *Product.* Ammonium hydroxide.
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1141 Ammonium phosphate.**

- (a) *Product.* Ammonium phosphate (mono- and dibasic).
- (b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1143 Ammonium sulfate.**

- (a) *Product.* Ammonium sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1155 Bentonite.**

(a) *Product.* Bentonite.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1165 Butane.**

(a) *Product.* Butane.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1191 Calcium carbonate.**

(a) *Product.* Calcium carbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1193 Calcium chloride.**

(a) *Product.* Calcium chloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1195 Calcium citrate.**

(a) *Product.* Calcium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1199 Calcium gluconate.**

(a) *Product.* Calcium gluconate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1205 Calcium hydroxide.**

(a) *Product.* Calcium hydroxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1207 Calcium lactate.**

(a) *Product.* Calcium lactate.

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

**§ 582.1210 Calcium oxide.**

(a) *Product.* Calcium oxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1217 Calcium phosphate.**

(a) *Product.* Calcium phosphate (mono-, di-, and tribasic).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1235 Caramel.**

(a) *Product.* Caramel.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1240 Carbon dioxide.**

(a) *Product.* Carbon dioxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1275 Dextrans.**

(a) *Product.* Dextrans of average molecular weight below 100,000.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1320 Glycerin.**

(a) *Product.* Glycerin.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1324 Glyceryl monostearate.**

(a) *Product.* Glyceryl monostearate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1355 Helium.**

(a) *Product.* Helium.

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

**§ 582.1366 Hydrogen peroxide.**

(a) *Product.* Hydrogen peroxide.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used as a bleaching agent in accordance with good manufacturing or feeding practice.

**§ 582.1400 Lecithin.**

(a) *Product.* Lecithin.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1425 Magnesium carbonate.**

(a) *Product.* Magnesium carbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1428 Magnesium hydroxide.**

(a) *Product.* Magnesium hydroxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1431 Magnesium oxide.**

(a) *Product.* Magnesium oxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1480 Methylcellulose.**

(a) *Product.* U.S.P. methylcellulose, except that the methoxy content shall not be less than 27.5 percent and not more than 31.5 percent on a dry-weight basis.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1500 Monoammonium glutamate.**

(a) *Product.* Monoammonium glutamate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1516 Monopotassium glutamate.**

(a) *Product.* Monopotassium glutamate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1540 Nitrogen.**

(a) *Product.* Nitrogen.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1585 Papain.**

(a) *Product.* Papain.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1613 Potassium bicarbonate.**

(a) *Product.* Potassium bicarbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1619 Potassium carbonate.**

(a) *Product.* Potassium carbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1625 Potassium citrate.**

(a) *Product.* Potassium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1631 Potassium hydroxide.**

(a) *Product.* Potassium hydroxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1643 Potassium sulfate.**

(a) *Product.* Potassium sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1655 Propane.**

(a) *Product.* Propane.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1666 Propylene glycol.**

(a) *Product.* Propylene glycol.

(b) *Conditions of use.* This substance is generally recognized as safe (except in cat food) when used in accordance with good manufacturing or feeding practice.

[41 FR 38657, Sept. 10, 1976, as amended at 61 FR 19544, May 2, 1996]

**§ 582.1685 Rennet.**

(a) *Product.* Rennet (rennin).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1711 Silica aerogel.**

(a) *Product.* Silica aerogel as a finely powdered microcellular silica foam having a minimum silica content of 89.5 percent.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used as a component of antifoaming agents in accordance with good manufacturing or feeding practice.

**§ 582.1721 Sodium acetate.**

(a) *Product.* Sodium acetate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1736 Sodium bicarbonate.**

(a) *Product.* Sodium bicarbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1742 Sodium carbonate.**

(a) *Product.* Sodium carbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1745 Sodium carboxymethylcellulose.**

(a) *Product.* Sodium carboxymethylcellulose is the sodium salt of carboxymethylcellulose not less than 99.5 percent on a dry-weight basis, with maximum substitution of 0.95 carboxymethyl groups per anhydroglucose unit, and with a minimum viscosity of 25 centipoises for 2 percent by weight aqueous solution at 25° C.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1748 Sodium caseinate.**

(a) *Product.* Sodium caseinate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1751 Sodium citrate.**

(a) *Product.* Sodium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1763 Sodium hydroxide.**

(a) *Product.* Sodium hydroxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1775 Sodium pectinate.**

(a) *Product.* Sodium pectinate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1778 Sodium phosphate.**

(a) *Product.* Sodium phosphate (mono-, di-, and tribasic).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1781 Sodium aluminum phosphate.**

(a) *Product.* Sodium aluminum phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1792 Sodium sesquicarbonate.**

(a) *Product.* Sodium sesquicarbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1804 Sodium potassium tartrate.**

(a) *Product.* Sodium potassium tartrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1810 Sodium tripolyphosphate.**

(a) *Product.* Sodium tripolyphosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1901 Triacetin.**

(a) *Product.* Triacetin (glyceryl triacetate).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1973 Beeswax.**

(a) *Product.* Beeswax (yellow wax).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1975 Bleached beeswax.**

(a) *Product.* Bleached beeswax (white wax).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.1978 Carnauba wax.**

(a) *Product.* Carnauba wax.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**Subpart C—Anticaking Agents**

**§ 582.2122 Aluminum calcium silicate.**

(a) *Product.* Aluminum calcium silicate.

(b) *Tolerance.* 2 percent.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in table salt in accordance with good manufacturing or feeding practice.

**§ 582.2227 Calcium silicate.**

(a) *Product.* Calcium silicate.

(b) *Tolerance.* 2 percent and 5 percent.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used at levels not exceeding 2 percent in table salt and 5 percent in baking powder in accordance with good manufacturing or feeding practice.

**§ 582.2437 Magnesium silicate.**

(a) *Product.* Magnesium silicate.

(b) *Tolerance.* 2 percent.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in table salt in accordance with good manufacturing or feeding practice.

**§ 582.2727 Sodium aluminosilicate.**

(a) *Product.* Sodium aluminosilicate (sodium silicoaluminate).

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 2 percent in accordance with good manufacturing or feeding practice.

**§ 582.2729 Hydrated sodium calcium aluminosilicate.**

(a) *Product.* Hydrated sodium calcium aluminosilicate (sodium calcium silicoaluminate).

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 2 percent in accordance with good manufacturing or feeding practice.

**§ 582.2906 Tricalcium silicate.**

(a) *Product.* Tricalcium silicate.

(b) *Tolerance.* 2 percent.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in table salt

in accordance with good manufacturing or feeding practice.

### Subpart D—Chemical Preservatives

#### § 582.3013 Ascorbic acid.

(a) *Product.* Ascorbic acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3021 Benzoic acid.

(a) *Product.* Benzoic acid.

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.1 percent in accordance with good manufacturing or feeding practice.

#### § 582.3041 Erythorbic acid.

(a) *Product.* Erythorbic acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3081 Propionic acid.

(a) *Product.* Propionic acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3089 Sorbic acid.

(a) *Product.* Sorbic acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3109 Thiodipropionic acid.

(a) *Product.* Thiodipropionic acid.

(b) *Tolerance.* This substance is generally recognized as safe for use in food when the total content of antioxidants is not over 0.02 percent of fat or oil content including essential (volatile) oil content of the food, provided the substance is used in accordance with good manufacturing or feeding practice.

#### § 582.3149 Ascorbyl palmitate.

(a) *Product.* Ascorbyl palmitate.

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

#### § 582.3169 Butylated hydroxyanisole.

(a) *Product.* Butylated hydroxyanisole.

(b) *Tolerance.* This substance is generally recognized as safe for use in food when the total content of antioxidants is not over 0.02 percent of fat or oil content, including essential (volatile) oil content of food provided the substance is used in accordance with good manufacturing or feeding practice.

#### § 582.3173 Butylated hydroxytoluene.

(a) *Product.* Butylated hydroxytoluene.

(b) *Tolerance.* This substance is generally recognized as safe for use in food when the total content of antioxidants is not over 0.02 percent of fat or oil content, including essential (volatile) oil content of food provided the substance is used in accordance with good manufacturing or feeding practice.

#### § 582.3189 Calcium ascorbate.

(a) *Product.* Calcium ascorbate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3221 Calcium propionate.

(a) *Product.* Calcium propionate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3225 Calcium sorbate.

(a) *Product.* Calcium sorbate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.3280 Dilauryl thiodipropionate.

(a) *Product.* Dilauryl thiodipropionate.

(b) *Tolerance.* This substance is generally recognized as safe for use in food when the total content of antioxidants is not over 0.02 percent of fat or oil content, including essential (volatile) oil content of the food, provided the substance is used in accordance with

good manufacturing or feeding practice.

**§ 582.3336 Gum guaiac.**

(a) *Product.* Gum guaiac.  
 (b) *Tolerance.* 0.1 percent (equivalent antioxidant activity 0.01 percent).

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in edible fats or oils in accordance with good manufacturing or feeding practice.

**§ 582.3490 Methylparaben.**

(a) *Product.* Methylparaben (methyl *p*-hydroxybenzoate).

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.1 percent in accordance with good manufacturing or feeding practice.

**§ 582.3616 Potassium bisulfite.**

(a) *Product.* Potassium bisulfite.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice, except that it is not used in meats or in food recognized as source of vitamin B<sub>1</sub>.

**§ 582.3637 Potassium metabisulfite.**

(a) *Product.* Potassium metabisulfite.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice, except that it is not used in meats or in food recognized as source of vitamin B<sub>1</sub>.

**§ 582.3640 Potassium sorbate.**

(a) *Product.* Potassium sorbate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.3660 Propyl gallate.**

(a) *Product.* Propyl gallate.

(b) *Tolerance.* This substance is generally recognized as safe for use in food when the total content of antioxidants is not over 0.02 percent of fat or oil content, including essential (volatile) oil content of the food, provided the

substance is used in accordance with good manufacturing or feeding practice.

**§ 582.3670 Propylparaben.**

(a) *Product.* Propylparaben (propyl *p*-hydroxybenzoate).

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.1 percent in accordance with good manufacturing or feeding practice.

**§ 582.3731 Sodium ascorbate.**

(a) *Product.* Sodium ascorbate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.3733 Sodium benzoate.**

(a) *Product.* Sodium benzoate.

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.1 percent in accordance with good manufacturing or feeding practice.

**§ 582.3739 Sodium bisulfite.**

(a) *Product.* Sodium bisulfite.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice, except that it is not used in meats or in food recognized as source of vitamin B<sub>1</sub>.

**§ 582.3766 Sodium metabisulfite.**

(a) *Product.* Sodium metabisulfite.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice, except that it is not used in meats or in food recognized as source of vitamin B<sub>1</sub>.

**§ 582.3784 Sodium propionate.**

(a) *Product.* Sodium propionate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.3795 Sodium sorbate.**

(a) *Product.* Sodium sorbate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.3798 Sodium sulfite.**

(a) *Product.* Sodium sulfite.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice, except that it is not used in meats or in food recognized as source of vitamin B<sub>1</sub>.

**§ 582.3845 Stannous chloride.**

(a) *Product.* Stannous chloride.

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.0015 percent calculated as tin in accordance with good manufacturing or feeding practice.

**§ 582.3862 Sulfur dioxide.**

(a) *Product.* Sulfur dioxide.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice, except that it is not used in meats or in food recognized as source of vitamin B<sub>1</sub>.

**§ 582.3890 Tocopherols.**

(a) *Product.* Tocopherols.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**Subpart E—Emulsifying Agents**

**§ 582.4101 Diacetyl tartaric acid esters of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.**

(a) *Product.* Diacetyl tartaric acid esters of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.4505 Mono- and diglycerides of edible fats or oils, or edible fat-forming acids.**

(a) *Product.* Mono- and diglycerides of edible fats or oils, or edible fat-forming acids.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.4521 Monosodium phosphate derivatives of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.**

(a) *Product.* Monosodium phosphate derivatives of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.4666 Propylene glycol.**

(a) *Product.* Propylene glycol.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**Subpart F—Nutrients and/or Dietary Supplements<sup>1</sup>**

**§ 582.5013 Ascorbic acid.**

(a) *Product.* Ascorbic acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5017 Aspartic acid.**

(a) *Product.* Aspartic acid (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5049 Aminoacetic acid.**

(a) *Product.* Glycine (aminoacetic acid).

(b) [Reserved]

<sup>1</sup>Amino acids listed in this subpart may be free hydrochloride salt, hydrated, or anhydrous form, where applicable.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in animal feeds in accordance with good manufacturing or feeding practice.

**§ 582.5065 Linoleic acid.**

(a) *Product.* Linoleic acid prepared from edible fats and oils and free from chick-edema factor.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5118 Alanine.**

(a) *Product.* Alanine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5145 Arginine.**

(a) *Product.* Arginine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5159 Biotin.**

(a) *Product.* Biotin.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5191 Calcium carbonate.**

(a) *Product.* Calcium carbonate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5195 Calcium citrate.**

(a) *Product.* Calcium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5201 Calcium glycerophosphate.**

(a) *Product.* Calcium glycerophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5210 Calcium oxide.**

(a) *Product.* Calcium oxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5212 Calcium pantothenate.**

(a) *Product.* Calcium pantothenate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5217 Calcium phosphate.**

(a) *Product.* Calcium phosphate (mono-, di-, and tribasic).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5223 Calcium pyrophosphate.**

(a) *Product.* Calcium pyrophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5230 Calcium sulfate.**

(a) *Product.* Calcium sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5245 Carotene.**

(a) *Product.* Carotene.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5250 Choline bitartrate.**

(a) *Product.* Choline bitartrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5252 Choline chloride.**

(a) *Product.* Choline chloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5260 Copper gluconate.**

(a) *Product.* Copper gluconate.

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.005 percent in accordance with good manufacturing or feeding practice.

**§ 582.5271 Cysteine.**

(a) *Product.* Cysteine (L-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5273 Cystine.**

(a) *Product.* Cystine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5301 Ferric phosphate.**

(a) *Product.* Ferric phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5304 Ferric pyrophosphate.**

(a) *Product.* Ferric pyrophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5306 Ferric sodium pyrophosphate.**

(a) *Product.* Ferric sodium pyrophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5308 Ferrous gluconate.**

(a) *Product.* Ferrous gluconate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5311 Ferrous lactate.**

(a) *Product.* Ferrous lactate.

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

**§ 582.5315 Ferrous sulfate.**

(a) *Product.* Ferrous sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5361 Histidine.**

(a) *Product.* Histidine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5370 Inositol.**

(a) *Product.* Inositol.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5375 Iron reduced.**

(a) *Product.* Iron reduced.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5381 Isoleucine.**

(a) *Product.* Isoleucine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5406 Leucine.**

(a) *Product.* Leucine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5411 Lysine.**

(a) *Product.* Lysine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5431 Magnesium oxide.**

(a) *Product.* Magnesium oxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5434 Magnesium phosphate.**

(a) *Product.* Magnesium phosphate (di- and tribasic).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5443 Magnesium sulfate.**

(a) *Product.* Magnesium sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5446 Manganese chloride.**

(a) *Product.* Manganese chloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5449 Manganese citrate.**

(a) *Product.* Manganese citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5452 Manganese gluconate.**

(a) *Product.* Manganese gluconate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5455 Manganese glycerophosphate.**

(a) *Product.* Manganese glycerophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5458 Manganese hypophosphite.**

(a) *Product.* Manganese hypophosphite.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5461 Manganese sulfate.**

(a) *Product.* Manganese sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5464 Manganous oxide.**

(a) *Product.* Manganous oxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5470 Mannitol.**

(a) *Product.* Mannitol.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5475 Methionine.**

(a) *Product.* Methionine.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in animal feeds in accordance with good manufacturing or feeding practice.

**§ 582.5477 Methionine hydroxy analog and its calcium salts.**

(a) *Product.* Methionine hydroxy analog and its calcium salts.

(b) [Reserved]

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in animal feeds in accordance with good manufacturing or feeding practice.

**§ 582.5530 Niacin.**

(a) *Product.* Niacin.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5535 Niacinamide.**

(a) *Product.* Niacinamide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5580 D-Pantotheryl alcohol.**

(a) *Product.* D-Pantotheryl alcohol.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5590 Phenylalanine.**

(a) *Product.* Phenylalanine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5622 Potassium chloride.**

(a) *Product.* Potassium chloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5628 Potassium glycerophosphate.**

(a) *Product.* Potassium glycerophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5634 Potassium iodide.**

(a) *Product.* Potassium iodide.

(b) *Tolerance.* 0.01 percent.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in table salt as a source of dietary iodine in accordance with good manufacturing or feeding practice.

**§ 582.5650 Proline.**

(a) *Product.* Proline (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5676 Pyridoxine hydrochloride.**

(a) *Product.* Pyridoxine hydrochloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5695 Riboflavin.**

(a) *Product.* Riboflavin.

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

**§ 582.5697 Riboflavin-5-phosphate.**

(a) *Product.* Riboflavin-5-phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5701 Serine.**

(a) *Product.* Serine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5772 Sodium pantothenate.**

(a) *Product.* Sodium pantothenate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5778 Sodium phosphate.**

(a) *Product.* Sodium phosphate (mono-, di-, and tribasic).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5835 Sorbitol.**

(a) *Product.* Sorbitol.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5875 Thiamine hydrochloride.**

(a) *Product.* Thiamine hydrochloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5878 Thiamine mononitrate.**

(a) *Product.* Thiamine mononitrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5881 Threonine.**

(a) *Product.* Threonine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

**§ 582.5890 Tocopherols.**

(a) *Product.* Tocopherols.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5892 *a*-Tocopherol acetate.**

(a) *Product.* *a*-Tocopherol acetate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5915 Tryptophane.**

(a) *Product.* Tryptophane (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5920 Tyrosine.**

(a) *Product.* Tyrosine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5925 Valine.**

(a) *Product.* Valine (L- and DL-forms).

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5930 Vitamin A.**

(a) *Product.* Vitamin A.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5933 Vitamin A acetate.**

(a) *Product.* Vitamin A acetate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5936 Vitamin A palmitate.**

(a) *Product.* Vitamin A palmitate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5945 Vitamin B<sub>12</sub>.**

(a) *Product.* Vitamin B<sub>12</sub>.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5950 Vitamin D<sub>2</sub>.**

(a) *Product.* Vitamin D<sub>2</sub>.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5953 Vitamin D<sub>3</sub>.**

(a) *Product.* Vitamin D<sub>3</sub>.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5985 Zinc chloride.**

(a) *Product.* Zinc chloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5988 Zinc gluconate.**

(a) *Product.* Zinc gluconate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5991 Zinc oxide.**

(a) *Product.* Zinc oxide.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5994 Zinc stearate.**

(a) *Product.* Zinc stearate prepared from stearic acid free from chik- edema factor.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.5997 Zinc sulfate.**

(a) *Product.* Zinc sulfate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

### Subpart G—Sequestrants<sup>2</sup>

#### § 582.6033 Citric acid.

(a) *Product.* Citric acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6085 Sodium acid phosphate.

(a) *Product.* Sodium acid phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6099 Tartaric acid.

(a) *Product.* Tartaric acid.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6185 Calcium acetate.

(a) *Product.* Calcium acetate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6193 Calcium chloride.

(a) *Product.* Calcium chloride.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6195 Calcium citrate.

(a) *Product.* Calcium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6197 Calcium diacetate.

(a) *Product.* Calcium diacetate.

(b) *Conditions of use.* This substance is generally recognized as safe when

used in accordance with good manufacturing or feeding practice.

#### § 582.6199 Calcium gluconate.

(a) *Product.* Calcium gluconate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6203 Calcium hexametaphosphate.

(a) *Product.* Calcium hexametaphosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6215 Monobasic calcium phosphate.

(a) *Product.* Monobasic calcium phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6219 Calcium phytate.

(a) *Product.* Calcium phytate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6285 Dipotassium phosphate.

(a) *Product.* Dipotassium phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6290 Disodium phosphate.

(a) *Product.* Disodium phosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

#### § 582.6386 Isopropyl citrate.

(a) *Product.* Isopropyl citrate.

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.02 percent in accordance with good manufacturing or feeding practice.

#### § 582.6511 Monoisopropyl citrate.

(a) *Product.* Monoisopropyl citrate.

<sup>2</sup>For the purpose of this subpart, no attempt has been made to designate those sequestrants that may also function as chemical preservatives.

§ 582.6625

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6625 Potassium citrate.**

(a) *Product.* Potassium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

[41 FR 38657, Sept. 10, 1976. Redesignated at 42 FR 14091, Mar. 15, 1977]

**§ 582.6751 Sodium citrate.**

(a) *Product.* Sodium citrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

[41 FR 38657, Sept. 10, 1976. Redesignated at 42 FR 14091, Mar. 15, 1977]

**§ 582.6754 Sodium diacetate.**

(a) *Product.* Sodium diacetate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6757 Sodium gluconate.**

(a) *Product.* Sodium gluconate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6760 Sodium hexametaphosphate.**

(a) *Product.* Sodium hexametaphosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6769 Sodium metaphosphate.**

(a) *Product.* Sodium metaphosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6778 Sodium phosphate.**

(a) *Product.* Sodium phosphate (mono-, di-, and tribasic).

(b) *Conditions of use.* This substance is generally recognized as safe when

21 CFR Ch. I (4–1–99 Edition)

used in accordance with good manufacturing or feeding practice.

**§ 582.6787 Sodium pyrophosphate.**

(a) *Product.* Sodium pyrophosphate.

(b) *Condition of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6789 Tetra sodium pyrophosphate.**

(a) *Product.* Tetra sodium pyrophosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6801 Sodium tartrate.**

(a) *Product.* Sodium tartrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6804 Sodium potassium tartrate.**

(a) *Product.* Sodium potassium tartrate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6807 Sodium thiosulfate.**

(a) *Product.* Sodium thiosulfate.

(b) *Tolerance.* 0.1 percent.

(c) *Limitations, restrictions, or explanation.* This substance is generally recognized as safe when used in salt in accordance with good manufacturing or feeding practice.

**§ 582.6810 Sodium tripolyphosphate.**

(a) *Product.* Sodium tripolyphosphate.

(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

**§ 582.6851 Stearyl citrate.**

(a) *Product.* Stearyl citrate.

(b) *Tolerance.* This substance is generally recognized as safe for use at a level not exceeding 0.15 percent in accordance with good manufacturing or feeding practice.

## Subpart H—Stabilizers

**§ 582.7115 Agar-agar.**(a) *Product.* Agar-agar.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7133 Ammonium alginate.**(a) *Product.* Ammonium alginate.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7187 Calcium alginate.**(a) *Product.* Calcium alginate.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7255 Chondrus extract.**(a) *Product.* Chondrus extract (carrageenin).(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7330 Gum arabic.**(a) *Product.* Acacia (gum arabic).(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7333 Gum ghatti.**(a) *Product.* Gum ghatti.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7339 Guar gum.**(a) *Product.* Guar gum.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7343 Locust bean gum.**(a) *Product.* Locust (carob) bean gum.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7349 Sterculia gum.**(a) *Product.* Sterculia gum (karaya gum).(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7351 Gum tragacanth.**(a) *Product.* Tragacanth (gum tragacanth).(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7610 Potassium alginate.**(a) *Product.* Potassium alginate.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**§ 582.7724 Sodium alginate.**(a) *Product.* Sodium alginate.(b) *Conditions of use.* This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice.**PART 584—FOOD SUBSTANCES AFFIRMED AS GENERALLY RECOGNIZED AS SAFE IN FEED AND DRINKING WATER OF ANIMALS**

## Subpart A [Reserved]

## Subpart B—Listing of Specific Substances Affirmed as GRAS

Sec.

584.200 Ethyl alcohol containing ethyl acetate.

584.700 Hydrophobic silicas.

AUTHORITY: 21 U.S.C. 321, 342, 348, 371.

## Subpart A [Reserved]

## Subpart B—Listing of Specific Substances Affirmed as GRAS

**§ 584.200 Ethyl alcohol containing ethyl acetate.**

The feed additive ethyl alcohol containing ethyl acetate meets the requirement of 27 CFR 212.45, being not less than 92.5 percent ethyl alcohol, each 100 gallons having had added the