

## Appendix <sup>1</sup>

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<sup>1</sup> U.S. Department of Agriculture and U.S. Department of Health and Human Services, *The Scientific Foundation for the Dietary Guidelines for Americans, 2025-2030 – Appendices*, Appendix 1, <https://cdn.realfood.gov/Scientific%20Report%20Appendices.pdf>.

**Table A1. Chemical Additives and Food Packaging Contaminants**

Chemical Additive	Sources	GRAS Status
<b>GRAS revoked</b>		
Partially hydrogenated vegetable oils (trans fatty acids)	Industrial partially hydrogenated vegetable oils used in margarines, shortenings, baked goods and fried foods	Revoked (2018)
Brominated Vegetable Oil (BVO)	Used in citrus-flavored sodas and sports drinks to keep flavor oils evenly distributed	Revoked (2024)
<b>Antimicrobials / Preservatives</b>		
Propyl Paraben (Propyl p-hydroxybenzoate)	Used in baked goods, syrups, and beverages to inhibit molds	Affirmed (1977)
Sodium Benzoate	Common in acidic foods/drinks (sodas, jams) to inhibit microbes	Affirmed (1973)
Potassium Sorbate	Widely used in cheeses, wines, baked goods to prevent molds/yeast	Affirmed (1982)
Calcium Propionate	Added to breads, baked goods, and cheese to inhibit mold growth	Affirmed (1984)
<b>Preservatives</b>		
Sodium Nitrite (and Sodium Nitrate)	Cured meats (bacon, ham, hot dogs) and some fish products for color and botulism protection	Grandfathered (pre-1958)
Sulfites (e.g., Sulfur Dioxide, Sodium Bisulfite)	Used to preserve color and freshness in dried fruits, wine, and shrimp (prevents browning, microbial growth)	Affirmed (1959, 1977)
<b>Flavor enhancers</b>		
Monosodium glutamate (MSG)	Used to impart umami flavor in soups, snacks, seasonings, frozen dinners and restaurant foods.	CFR approved (1996)
Disodium inosinate & disodium guanylate	Snack foods, soups, ramen noodles, seasoning blends.	CFR approved (1977)
<b>Artificial sweeteners</b>		
Aspartame	Low-calorie sweetener in diet sodas, sugar-free foods, tabletop sweeteners (e.g., "Equal")	Affirmed (1981, 1983)
Saccharin (and its salts)	Tabletop sweeteners (e.g., "Sweet'N Low"), diet sodas, pharmaceuticals (coatings)	Grandfathered (pre-1958)
Sucratose	"Splenda" – used in diet beverages, sugar-free desserts, baked goods, tabletop packets	Affirmed (1998)
Acesulfame potassium (Ace-K)	Diet sodas, baked goods, frozen desserts, tabletop sweeteners.	Affirmed (1988, 2003)
Xylitol	Sugar-free gum, mints, toothpaste, oral care products; naturally in fruits and vegetables.	Affirmed (1963)
Erythritol	Low-calorie sweetener in sugar-free candies, baked goods and beverages.	Affirmed (2001)
Sorbitol	Sugar-free candies, chewing gum, and "sugar-free" baked goods.	Affirmed (1977)
Maltitol	Sugar-free chocolates, candies, baked goods.	Self-affirmed (late 1970s/early 1980's)
Lactitol	Reduced-calorie ice cream, chocolate, baked goods, candies.	Affirmed (1993)
Mannitol	Chewing gum, candies, "dusting" powder on gum or pharmaceuticals.	Affirmed (1977)
Neotame	Baked goods, beverages, gum; rarely used because extremely sweet.	Affirmed (2002)
Advantame	High-intensity sweetener used in baked goods, chewing gum and beverages; rarely used because extremely sweet.	CFR approved (2014)

Chemical Additive	Sources	GRAS Status
<b>Emulsifiers &amp; Thickeners</b>		
Cellulose gum (carboxymethylcellulose)	Salad dressings, sauces, ice cream, grated cheese, yogurt, cream cheese, gluten-free baked goods.	Affirmed (1977)
Guar gum	Salad dressings, yogurt, sauces, plant milks, ice cream, canned soups.	Affirmed (1974)
Xanthan gum	Salad dressing, sauces, gluten-free flours, canned soups, ice cream, plant milks.	CFR approved (1990)
Maltodextrin	Sauces, cereals, chips, baked goods, yogurt, sodas, sports drinks.	CFR approved (1983)
Soy lecithin	Salad dressings, sauces, ice cream, yogurt, margarine, baked goods, chocolate.	CFR approved (1983)
Polysorbate 80 (Tween 80)	Used in ice cream, yogurt, salad dressings, desserts for smooth texture and mixing oils/fats with water	Grandfathered (pre-1958)
Polysorbate 20	Ice cream, salad dressings, baked goods, sauces, chewing gum.	CFR approved (1977)
Carboxymethyl Cellulose (CMC) (Cellulose Gum)	Used in baked goods, beverages, ice creams for texture and stability (prevents ingredient separation)	Affirmed (1979)
Carageenan	Used in dairy products, plant-based milks, and meats to improve texture and water retention	Affirmed (1973)
<b>Food dyes</b>		
FD&C Red No. 3 ( <i>Erythrosine</i> )	Cherries (cocktail/maraschino), candies, baked goods, snack gels	Affirmed (1969)
FD&C Red No. 40 ( <i>Allura Red</i> )	Beverages, candies, snacks, cereals, desserts (one of the most common red dyes)	Affirmed (1971)
FD&C Yellow No. 5 ( <i>Tartrazine</i> )	Beverages, candies, cereals, dessert powders, pickles, etc.	Affirmed (1969)
FD&C Yellow No. 6 ( <i>Sunset Yellow FCF</i> )	Bakery goods, candies, beverages, snack foods (provides orange shade)	Affirmed (1986)
FD&C Blue No. 1 ( <i>Brilliant Blue</i> )	Beverages, confections, frostings, ice pops, etc. (often combined with Yellow for greens)	Affirmed (1982)
<b>Other chemical additives</b>		
Azodicarbonamide (ADA)	Added to wheat flour and bread dough to improve texture and whiten flour	Affirmed (1962)
Potassium Bromate	Used in bread flour to promote rise and texture (stronger dough)	CFR approved (1977)
<b>Antioxidants / preservatives</b>		
Butylated Hydroxyanisole (BHA)	Added to fats/oils (snack foods, cereals) to prevent rancidity	Affirmed (1977)
Butylated Hydroxytoluene (BHT)	Used in cereals, snacks, and shortening to extend shelf-life	Affirmed (1973)
Tertiary Butylhydroquinone (TBHQ)	Stabilizes vegetable oils and fried foods (e.g., chips) against oxidation	Affirmed (1977)
Propyl Gallate	Often used with BHA/BHT in oils, meats, etc. to prevent spoilage	Affirmed (1977)
<b>Food packaging contaminants</b>		
Microplastics	Detected in salt, seafood, sugar, beer, bottled water, honey, milk, tea and other foods via contaminated packaging or environment.	N/A
Phthalates (plasticizers)	Food packaging, processing equipment, adhesives, lubricants, vinyl gloves; leach into fatty foods, dairy, meat, and fast-food.	N/A
PFAS (per- and polyfluoroalkyl substances)	Grease-resistant paper and paperboard packaging, non-stick cookware, contaminated seafood and crops near contaminated areas.	No longer sold for food contact use (2024).