

Glossary of Terms

Biobased: A product determined to be a commercial or industrial product other than food or feed that is composed, in whole or in significant part, of biological products or renewable domestic agricultural materials (including plant, animal, and marine materials) or forestry materials.

Source: USDA, Section 9002 of the Farm Security and Rural Investment Act of 2002

The United States Department of Agriculture's BioPreferredSM program indicates that items must meet the following biobased minimums:

Disposable Containers (Minimum Biobased Content: 72%): Products designed to be used for temporary storage or transportation of materials including, but not limited to, food items.

Disposable Cutlery (Minimum Biobased Content: 48%): Hand-held, disposable utensils designed for one-time use in eating food.

Films – Non-Durable (Minimum Biobased Content: 85%): Products that are used in packaging, wrappings, linings, and other similar applications; films that are intended for single use for short-term storage or protection before being discarded; non-durable films that are designed to have longer lives when used.

Films – Semi-Durable (Minimum Biobased Content: 45%): Products that are used in packaging, wrappings, linings, and other similar applications; films that are designed to resist water, ammonia, and other compounds, to be re-used, and to not readily biodegrade; products that are used in the production of bags and packaging materials.

Biobased: The amount of biogenic carbon (carbon from biological sources as opposed to petrochemical-based carbon) in the material or product as a fraction weight (mass) or percent weight (mass) of the total organic carbon in the material or product. Biobased content will be determined by testing representative product samples using the generally accepted methodology of ASTM D6866.

Source: H.R. 3586, Duncan Biomaterials Tax Credit Bill

Biobased (e.g., plastic products created from renewable resources/raw materials): The focus here is the raw material basis. Rather than using fossil carbon in manufacturing conventional plastics, biobased plastics use non-fossil carbon. In general, this involves the use of renewable resources such as sugar, starch, vegetable oils, or cellulose in production. The proportion of non-fossil renewable carbon used in the product can be determined using analytical methods. Biobased plastics do not necessarily have to be biodegradable and compostable.

Source: European Bioplastics

Biodegradable: Mirel is biodegradable in natural soil and water environments, home composting systems, and industrial composting facilities, the latter of which may not be available in your area. The rate and extent of Mirel's biodegradability will depend on the size and shape of the articles made from it. Mirel is not designed to effectively degrade in landfills.

Source: Telles

Biodegradable: The degradation of material from naturally occurring microorganisms, such as bacteria, fungi, or algae, over a period of time.

Source: ASTM

Biodegradable: Capable of decomposing under natural conditions.

Source: EPA

Biodegradable: Claims of degradability, biodegradability, or photodegradability should be qualified to the extent necessary to avoid consumer deception about: (1) the product or package's ability to degrade in the environment where it is customarily disposed; and (2) the rate and extent of degradation.

Source: Federal Trade Commission Environmental Marketing Claims (16 CFR Part 260)

Biodegradation (primary): Alteration in the chemical structure of a substance, brought about by biological action, resulting in the loss of a specific property of that substance. Ultimate biodegradation (aerobic) is the level of degradation achieved when the test compound is totally utilized by microorganisms, resulting in the production of carbon dioxide, water, mineral salts, and new microbial cellular constituents (biomass). Readily biodegradable is an arbitrary classification of chemicals which have passed certain specified screening tests for ultimate biodegradability; these tests are so stringent that it is assumed that such compounds will rapidly and completely biodegrade in aquatic environments under aerobic conditions. Inherently biodegradable is a classification of chemicals for which there is unequivocal evidence of biodegradation (primary or ultimate) in any test of biodegradability.

Source: EPA OPPTS 835.3110 and OECD Guideline

Bioplastics: A term to define two different kinds of plastics: 1. plastics based on renewable resources (origin of the raw material used); 2. biodegradable and compostable plastics according to EN 13432 or similar standards (compostability of the final product)

Bioplastics may be based on:

- renewable resources and biodegradable
- renewable resources but not be biodegradable
- fossil resources and biodegradable

Source: European Bioplastics

Bioplastics: Plastic that is biodegradable, has biobased content, or both.

Source: Society of Plastics Industry (SPI) Bioplastics Council

Compostable: Claims of compostability should be qualified to the extent necessary to avoid consumer deception. An unqualified claim may be deceptive if: (1) the package cannot be safely composted in a home compost pile or device; or (2) the claim misleads consumers about the environmental benefit provided when the product is disposed of in a landfill. A claim that a product is compostable in a municipal or institutional composting facility may need to be qualified to the extent necessary to avoid deception about the limited availability of such composting facilities.

Source: Federal Trade Commission Environmental Marketing Claims (16 CFR Part 260)

Compost: A managed, agricultural process in which organic materials, including animal manure and other wastes, are digested aerobically (with oxygen) or anaerobically (without oxygen) by microbial action. Composting can be done successfully on a large scale by farmers and waste management companies, or on a small scale at home. When composting is carefully controlled and managed and the appropriate conditions are achieved, the high temperature generated can kill most pathogens in a few weeks.

Source: FDA

Composting – Home: Diversion of organic food waste and yard trimmings from the municipal waste stream by composting them in one’s yard through controlled decomposition of organic matter by bacteria and fungi into a humus-like product. It is *considered source reduction, not recycling, because the composted materials never enter the municipal waste stream.*

Source: EPA

Compostable Plastic: Plastic that undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds, and biomass at a rate consistent with other known compostable materials and that leaves no visible, distinguishable, or toxic residue.

Source: ASTM

Natural Waters: Surface waters obtained from ponds, rivers, streams, etc.

Source: EPA

Renewable Energy Resources: Naturally replenishing but flow-limited, virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.

Source: DOE/EIA

Sustainable Packaging System: A target vision for companies to strive for packaging that can be transformed into a cradle to cradle flow of packaging materials in a system that is economically robust and provides benefit throughout its life cycle. Sustainable packaging:

- Is beneficial, safe, and healthy for individuals and communities throughout its life cycle;
- Meets market criteria for performance and cost;
- Is sourced, manufactured, transported and recycled using renewable energy;
- Maximizes use of renewable or recycled source materials;
- Is manufactured using clean production technologies and best practices;
- Is made from materials healthy in all probable end-of-life scenarios;
- Is physically designed to optimize materials and energy; and
- Is effectively recovered and utilized in biological or industrial cradle-to-cradle cycles.

Source: Sustainable Packaging Coalition