



# Principles for the Incorporation of Bio-Based Plastics in Manufacturing

## Introduction

Using bio-based feedstocks to manufacture plastics presents an exciting opportunity for America's Plastic Makers® to further reduce their use of virgin resources, such as crude oil and natural gas. The potential benefits of growing the use of bio-based feedstocks are a reduced greenhouse gas impact of plastics production and the displacement of fossil resources with renewable resources throughout the supply chain. America's Plastic Makers have already set an ambitious goal for 100% of U.S plastic packaging to be reused, recycled, or recovered by 2040, and support creation of federal policy for 30% of all U.S. plastics packaging to be made from recycled plastics by 2030. In addition to recycled plastics, there has been increasing demand from consumers for more sustainably sourced goods with lower environmental impacts including materials derived from bio-based sources. While market adoption of bioplastics products and packaging is still growing, the plastics industry has a proven track record of rapid innovation and strives to be at the forefront of innovative technologies and sustainable change. Plastic producers, converters, brand owners and retailers have been driving development of material solutions for years, and with recent development of new bio-based plastic solutions and the overall drive towards sustainability, the plastics value chain recognizes how incorporation of these solutions into the future of plastics manufacturing can contribute to a lower-carbon, more circular economy.

The American Chemistry Council Plastics Division (ACC) has developed these principles to promote policies that support responsible growth of commercially available and viable bio-based plastics production, as well as bolster solutions that help American companies reach their sustainability goals more rapidly.

## Terminology

**Biogenic content:** Refers to primary sources of biomaterial from virgin sources and materials made from feedstock utilizing waste and residue streams of biological origin (e.g. from forestry, agriculture, animal husbandry, and related industries) which can be physically measured to determine quantity.

**Bio-based plastics:** Plastics that are partially or fully derived from biogenic content streams and can be biodegradable, recyclable, or neither. Can be ascribed using both the segregated and mass balance chain of custody models.

**Segregated bio-based:** Indicates that the use of bio-based feedstock has been ascribed using the physical segregation approach chain of custody model in which material with specified (i.e., sustainable) characteristics is kept physically separated from initial input to final output.

## ATTACHMENT A

**Mass balance bio-based:** Indicates that the use of bio-based feedstock has been ascribed using the mass balance chain of custody model; in this model, materials with specified (i.e., sustainable) characteristics are allowed to mix with materials of different characteristics, therefore, the proportion of the input with specified (sustainable) characteristics may vary across outputs.

## ACC Bio-Based Plastics Principles

The following principles are intended to inform ACC advocacy and communications for developing the policy framework around increased use of bio-based feedstocks in plastics manufacturing.

### Scope of Principles

1. Bio-based plastics refers to plastics that are partially or fully derived from materials of biological origin and can be biodegradable, recyclable, or neither.
2. Fossil-based compostable/biodegradable plastics are out of scope for these principles.
3. ACC's bio-based plastics principles are inclusive of segregated and mass balance chain of custody processes.
4. These principles apply to bio-based plastics designed to be produced at industrial scale.

### Existing Principles

1. **Mass Balance:** Adopt the ACC principles for using mass balance found in the [Principles for the Advanced Recycling of Plastics Using a Mass Balance Approach](#) to support responsible utilization of commingled feedstock, production and marketing processes.
2. **Recycling:** Advocate for bio-based plastics policies that support mechanical, advanced, and organics recycling capabilities, and ensure bio-based plastics that are recycled are included in recycling reporting.
3. **Collaboration:** Advocate for alignment of the federal bioeconomy Action Plan with existing Industry/Government cooperation such as the DOE/ACC MOU for innovative recycling technologies and other circularity programs.
4. **Definitions:** Ensure clarity and consistency of terminology and definitions.

### Collaboration Between Government, Academia and Industry

1. **Incentives:** Any government investment, production incentives or credits should be designed to provide a level playing field with other biogenic product market incentives across the value chain and for all in-scope bio-based plastics.
2. **R&D:** Industry should be consulted in the process for targeting R&D funding, with science-based decision making and commercialization as goals.

## ATTACHMENT A

3. **Procurement and Promotion:** Ensure that use of bio-based plastics in public procurement can fulfill government sustainability commitments, expand resources for the USDA BioPreferred procurement and labelling program, and amend the FTC Green Guides to recognize bio-based plastics in the context of overall plastics circularity.

## Policy

1. **Data:** Support a defined Federal role to enable comprehensive data classification (NAICS), collection and reporting.
2. **Decision Making:** Use science and data-based decision making across all materials to support regulatory and policy alignment across levels of government. The potential benefits of including embedded biogenic carbon credits in product life cycle analyses should also be considered.
3. **Jurisdiction Alignment:** Advocate for policy alignment across international, federal, state, tribal and local jurisdictions to recognize global supply chains and information flow.
4. **Goals:** Develop ambitions for bio-based plastics in coordination with other Federal goals and targets for chemical and plastics circularity; and ensure both recycled and bio-based plastics are counted as potential contributors towards a circular economy.
5. **Standards:** Establish standards for harmonized feedstock sustainability criteria; plastic including biogenic content streams to be classified as “bio-based plastic”; and harmonized methodology for determining the percentage of biogenic content that should be based on internationally recognized, auditable and transparent third-party certification systems.
6. **Certification:** Environmental benefits claims are to comply with applicable governmental rules, and independent third-party certification systems should be recognized for their role in helping to support such claims.

## Feedstock

1. **Availability and Access:** Focus domestic research funding to develop more diverse feedstocks at scale and ensure a level playing field for access to feedstocks for bio-based plastics production.
2. **Eligibility:** Ensure cooperation of bio-based feedstock sourcing methodologies with sustainable agriculture principles, including food competition questions and social impact.