

Position on the Mass Balance Approach

Key Messages

- The mass balance approach is a recognized chain-of-custody model.
- BASF uses the mass balance model to replace fossil feedstocks with renewable or recycled feedstocks.
- The mass balance model can speed up the transition to a low carbon, circular (bio-)economy and help consumers to make informed purchasing decisions about more sustainable products.

About the Topic

The mass balance approach is a chain-of-custody model that can be used to ensure traceability in complex supply chains and production processes where it is not possible to physically segregate materials. It is used by several established programs related to sustainable or responsible sourcing, such as fair-trade schemes, the Forest Stewardship Council (FSC), as well as in the chemical industry.

The approach accounts for materials entering and leaving a production system. In the chemical industry the still small amount of alternative feedstock is mixed with conventional feedstocks and attributed to specific end products after chemical transformation has taken place. The volume of certified material entering the system is controlled and equal to the amounts of certified products based on certification standards and third-party audits. The mass balance approach is a recognized chain-of-custody model under international standard ISO 22095:2020. The mass balance approach supports positive environmental impact by substitution of conventional feedstock while not focusing on measurable content in the end product.

What Does BASF Offer?

BASF uses **mass balance approach** to support the use of more sustainable feedstocks. It is an important part of the company's **ChemCycling™ project**, in which fossil feedstock is replaced by pyrolysis oil derived from plastic waste. In addition, BASF is already using a **biomass balance** approach in which a certain amount of fossil feedstock in the BASF Verbund is replaced with renewable feedstock (currently, e.g. bio-naphtha or biomethane) and offers more than 900 biomass balanced products, including super absorbents, dispersions, plastics and intermediates. The method is subject to third-party certification by certification bodies like TÜV Nord using REDcert2, ISCC+ and other recognized certification schemes.

Our Position

BASF believes that the mass balance approach supports the transition to a carbon-neutral, circular (bio-)economy: As a trustworthy chain of custody model, it can support the substitution of fossil raw materials. The approach provides the necessary transparency about the use of circular feedstocks, so that consumers can make informed purchasing decisions. Manufacturers can thus continuously increase the availability of products with an improved environmental footprint in response to rising market demand.

The mass balance approach can be used to gradually substitute fossil feedstock with renewable or recycled alternatives in existing, highly efficient chemical production facilities. This reduces fossil feedstock consumption and CO₂ emissions. The transition is fast because existing production infrastructure can be used, there is no additional environmental footprint from building new plants for segregated production, and the investment hurdles are lower. The approach is especially relevant in the early phase of the transition to a circular economy.

While being scalable, the mass balance approach is also complementary to alternative chain-of-custody models like segregated production for bio-based products.

To encourage the wider use of recycled and renewable feedstock via mass balance models, BASF requests that the future regulatory framework should:

1. Acknowledge the mass balance approach in all regulations, directives and incentive schemes to drive uptake of recycled plastic and biomass.
2. Allow flexible rules within mass balance approaches in legislation to allow low-hurdle market entry for all players.
3. Include mass balance approaches in calculations of life cycle assessments (LCAs) and product environmental footprints (PEFs).

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