

1,4-Butanediol (BDO) with lower Product Carbon Footprint (PCF)

BASF
We create chemistry

Three variants for diverse applications and sustainability goals



Conventional

- Produced based on natural gas
- Highly efficient production setup in BASF Verbund
- Verified Product Carbon Footprint (PCF) advantage compared to industry average¹



Biobased

- 100% traceable biobased content (14C)²
- Using biobased materials from fermentation of plant-based sugars
- Lower PCF than BASF's corresponding conventional BDO
- Comparable quality as conventional version with the same specification



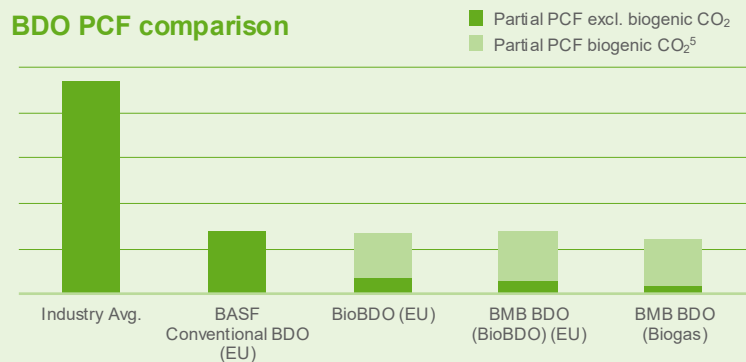
Biomass-Balanced
(BMBcert[®])

- 100% substitution of fossil resources with renewable resources in the value chain
- Lower PCF³ than BASF's corresponding conventional BDO
- Contribution to saving CO₂ emissions
- Drop-in solution: identical quality and properties compared to conventional BDO
- Attribution of renewable resources to sales product according to a certified mass balance approach⁴ (ISCC PLUS)

Demonstrably lower PCF

BASF's three 1,4-BDO variants provide a lower PCF compared to the industry average

BDO PCF comparison



¹ BASF's product carbon footprint (PCF) calculations follow the requirements and guidance given by ISO 14067:2018. In a methodology review, TÜV Rheinland has certified that the PCF methodology SCOTT developed and used by BASF SE for calculating the PCFs of BASF products is scientifically-based, is in accordance with ISO 14067:2018 and the [Together for Sustainability PCF Guideline](#), and reflects the state of the art (ID-Nr. 0000080389: BASF SE - Certipedia). BASF has made these assessments of corresponding third-party products using publicly available information and fee-based, proprietary market survey data on production routes and deployed raw materials, to the extent available, as well as BASF's own market and technology know-how. The data assumptions and allocation factors for third-party PCFs are the same as for the calculation of the PCF of the BASF product, as applicable. BASF's assessments of the PCFs of the corresponding third-party products have not been subject to an LCA critical review by an independent third party.

² 100% bio-based content as per EN 16640:2017

³ The PCF of BMBcert products is a cradle-to-gate assessment, taking into account all product-related greenhouse gas emissions and the biogenic uptake of the renewable raw materials used in the value chain and attributed to the products via a certified mass balance approach. The calculation does not include downstream value chain emissions such as transportation emissions from factory gate to customer, emissions from further processing and the end-of-life emissions (e.g., from waste treatment).

⁴ Find out more about BASF's biomass balance approach at: <https://chemicals.basf.com/global/en/Intermediates/sustainability/biomass-balance>

⁵ Biogenic uptake: CO₂ absorbed from the atmosphere through photosynthesis and retained in plant biomass throughout its life cycle

BDO is a versatile building block used in various products



Thermoplastic Polyurethanes (TPU):
chain extender leading to crystalline hard segment



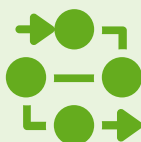
Polybutylene Terephthalate (PBT) and Copolyesters:
building block of copolyester elastomers



CAST Elastomers:
chain extender leading to crystalline hard segment



Polybutylene adipate terephthalate (PBAT):
building block



Derivatives:
production of N-Methyl-2-pyrrolidone (NMP), tetrahydrofuran (THF) and gamma-butyrolactone (GBL)



Polyester Polyols:
building block during synthesis

Product Details

Formula	$C_4H_{10}O_2$
Assay	Min 99.5 wt%
Water	Max 0.1%
Color	Max 15 APHA



CAS No.:
110-63-4



Packaging:
Drums, Bulk



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