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
- Favorable Product Carbon Footprint (PCF) compared to industry average[1]



reducedPCF (rPCF)

- Reduced product carbon footprint (rPCF)[1,2] achieved through low emission feedstocks and utilities
- > 25 percent PCF reduction[2] compared to the corresponding BASF standard product with unchanged product performance
- Enables customers to lower emissions in their value chains without altering formulations or processes



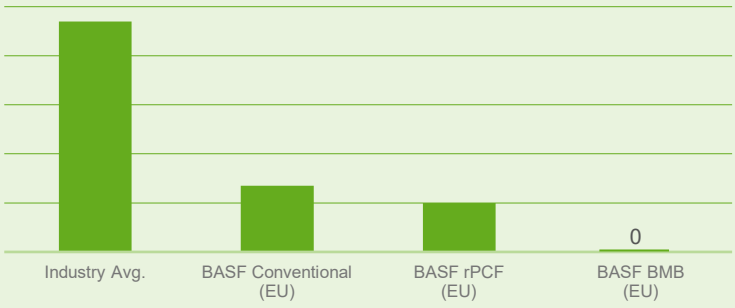
Biomass Balanced (BMBcert®)

- 100 percent substitution of fossil feedstocks with renewable feedstocks in the value chain and attribution to sales product according to a certified mass balance approach[3] (ISCC PLUS)
- Lower PCF[1,4] than BASF's corresponding conventional BDO
- Contribution to saving CO_2 emissions
- Drop-in solution: identical quality and properties compared to conventional BDO

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 of ISO 14067:2018. In a methodology review, TÜV Rheinland confirmed that the PCF (SCOTT) methodology developed and applied by BASF SE is scientifically robust and aligned with ISO 14067:2018 and the Together for Sustainability (TfS) Product Carbon Footprint Guideline for the Chemical Industry (Version 3.0, December 2024). TÜV Rheinland has also confirmed that the calculation approach for Biomass Balance (BMB) and ChemCycling® product carbon footprints, as well as the associated PCF reductions, follows conventional life cycle assessment (LCA) principles as described in ISO 14067 and the TfS Guideline. (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] BASF's Intermediates division's rPCF products come with a PCF reduction of at least 10% compared to the BASF standard product in the producing region. The PCF reduction is achieved through active measures, specifically the use of low emission feedstocks and low emission utilities. Downstream emissions (e.g., transport from factory gate to customer, further processing, end-of-life) are not included. The PCF calculation for rPCF products has been independently certified by TÜV Rheinland.

[3] In BASF's biomass balance (BMB) approach, fossil feedstocks are replaced with renewable feedstocks along the integrated production chain. The corresponding share is attributed to the specific sales product via a certified mass balance approach. Production methods of this kind save fossil resources and reduce CO_2 emissions at the same time. Renewable feedstock is not traceable in the BASF product. For more information, please visit Biomass Balanced (BMBcert®) Intermediates.

[4] The PCF of BMBcert products is a cradle-to-gate assessment, covering 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. Downstream emissions (e.g. transport from factory gate to customer, further processing, end-of-life) are not included.

CI 2605-10/26

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), tetra-hydrofuran (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 0.05%
Color	Max 10 APHA
Acetal	Max 0.15%



CAS No.:
110-63-4

Packaging:
Drums, Bulk

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For more information, visit our **website** or reach out to your account manager.

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