Product Carbon Footprint
BKD150-K/70 single wall insert

UGA SYSTEM-TECHNIK GmbH & Co.

Brief project description: This factsheet shows the CO_2 footprint of the BKD150-K/70 single wall insert Two variants are compared. One time, production is carried out using primary material, and another time, its ABS consists of 100% recycled material. The document itself and the data collected here must be treated as confidential.

Functional unit (FU): 1 piece BKD150-K/70 single walll insert, weight 0.62 kg.

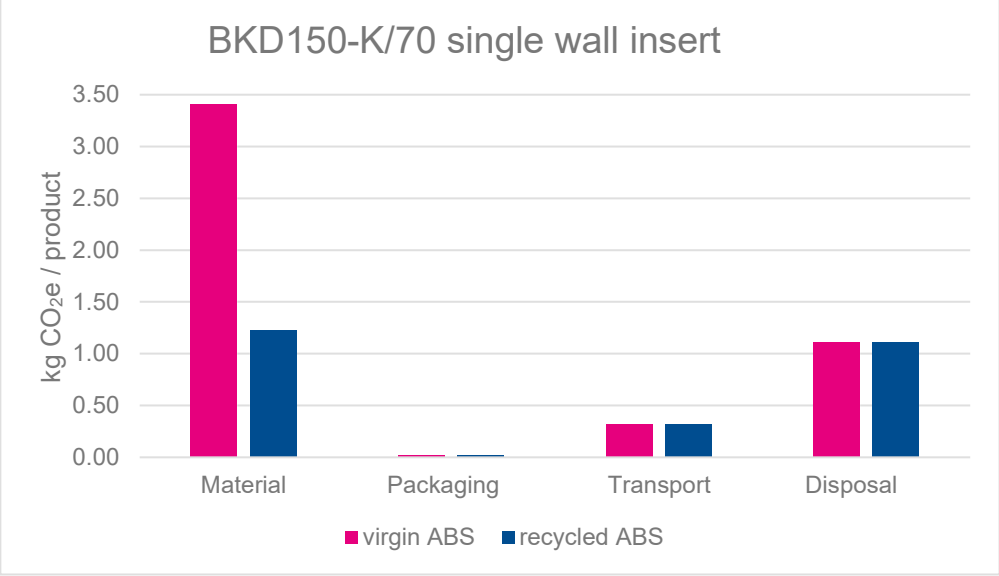
Data source: Primary data was provided by UGA SYSTEM-TECHNIK GmbH & Co. and refers to the company's activity data from the year 2022. Missing data was supplemented by assumptions and estimates.

System boundary: The PCF was carried out within the system boundary **"cradle to grave"** (from cradle to grave) and thus includes raw material extraction, their transport to the manufacturer, production including packaging, distribution, and disposal at the end of the product's life. The use phase was classified as not relevant.

Methodology: The calculation of the Product Carbon Footprint (PCF) was carried out in accordance with internationally recognized standards: ISO 14040[1], ISO 14044[2] and ISO 14067[3]. For the impact assessment, the accounting software SimaPro V9.5.0.1 was used, and the background database was ecoinvent version 3.9.1.

Impact assessment: Greenhouse potential 100 years - IPCC 2021, GWP100 V1.02 (GWP100y)

Result: The CO_2 footprint of the single wall insert without recycled content is **4.86 kg CO_2e/product**. In comparison, the CO_2 footprint for the product with 100% recycled ABS is **2.68 kg CO_2e/product** and is thus 45% lower. The distribution of emissions is shown in the following graphic and will be explained in more detail later.



The processes of packaging, transport, and disposal are identical for both products. The high value for disposal with 1.11 kg CO_2e is due to the high carbon content of the thermoplastics used, which is released during incineration. The processes of packaging with 0.02 CO_2e and transport with 0.32 CO_2e are comparatively low. The main focus of the comparison is on the juxtaposition of material production. A significant difference can be observed there: 3.40 kg CO_2e for the conventional single

[1] DIN EN ISO 14040, Environmental management – Life cycle assessment - Principles and framework.

[2] DIN EN ISO 14044, Environmental management – Life cycle assessment - Requirements and guidelines.

[3] DIN EN ISO 14067, Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification.

wall insert and 1.22 kg CO_2 when it is produced with 100% recycled ABS. The material process includes primary/secondary material production, processing, and transport to Herbrechtingen.

The results are projections and the exact values may differ from those modeled here.

Communication: This is only a summary, which serves for communication about the results of the CO2 balance.

Supplement: The carbon footprint is only one environmental indicator among many and does not reflect the entire environmental preference. Depending on the subject of investigation, other environmental indicators may or should also be considered.

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Note: Since both the processes in the production of products and the scientific knowledge about the ecological impacts and the processes underlying the modeling are constantly evolving, the validity of a PCF is limited to a maximum of five years. The PCF, as the basis for label issuance, must therefore be renewed regularly. We recommend a review of the PCF after three years.