Product Carbon Footprint
(Cradle-to-Gate)

Emissions:

Product 1 kg 100 % recycled PET flakes	Impact	Unit
Climate Change (Global Warming Potential)	0.43	kg CO$_2$eq

Explanation of the Calculation Methodology

Raw Material Extraction
Primary data (weight, type, and country of origin) was collected for the calculation of the model as well as secondary data from databases (ecoinvent 3.10 cut-off by classification) and scientific literature.

Upstream Transport
The upstream transport distances for the main material used, were determined via own calculations from primary data. Transport for other materials with overall impact under 1 % were included by using "market" datasets, including standardized transportation scenarios.

Production & Production Waste
The energy use (electricity and heat) and water use were collected for production of r-PET flakes in Serbia for the entire process and not split into sub-processes.
Amount of solid and liquid waste was collected for the production process.
For the waste, the Circular Footprint Formular (CFF) for energy recovery was used to account for production waste going to incineration for heat production.

Distribution
Distribution of the product was not part of the Cradle-to-Gate study.

End of life
End of Life of the product was not part of the Cradle-to-Gate study.

Allocation
The cut-off system model used (ecoinvent 3.10 cut-off by classification), resulted in secondary materials being available burden-free for subsequent uses.

State of Data except Energy: 2023
State of Energy Data: 2023
Period of PCF-Calculation: 2023
Date: 23.09.2024
Database: ecoinvent 3.10
Impact Method: EF 3.1

The PCF calculation followed the methodology outlined in the international standard ISO 14067 and was reviewed by DI Bernd Brandt.

Description of the Impact Category:

Climate Change

- Anthropogenic global warming
- Emission of greenhouse gases (GHG) increases the radiative forcing
- Results in e.g. an increase in the atmosphere and ocean average surface temperature
- Global warming leads to impairments of agricultural yields, important changes in physical characteristics of the earth, flooding, etc.
- Human health and ecosystem quality can get threatened