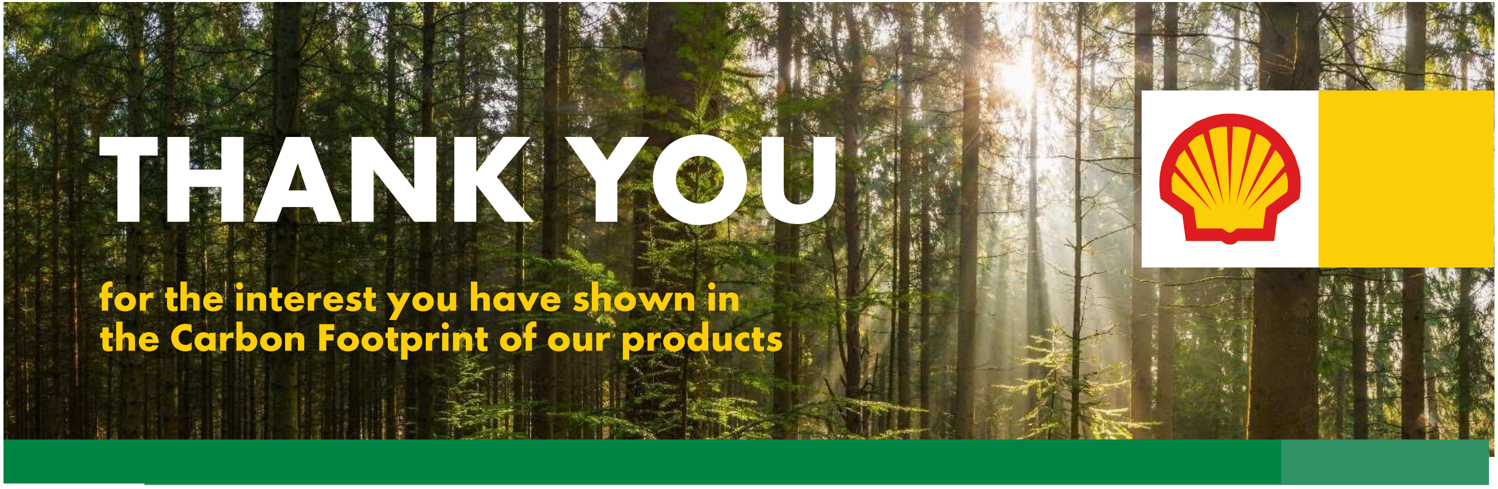


Enclosed is the Product Carbon Footprint (PCF) data you requested, for products manufactured using lower carbon feedstock. This document also contains a summary description of the method Shell Chemicals uses to calculate PCF. Please note that the data, methodology and PCF results are indicative only and are subject to change . If you have any further questions, please contact your Shell representative.

SHELL CHEMICALS CRADLE-TO-GATE PCF DATA

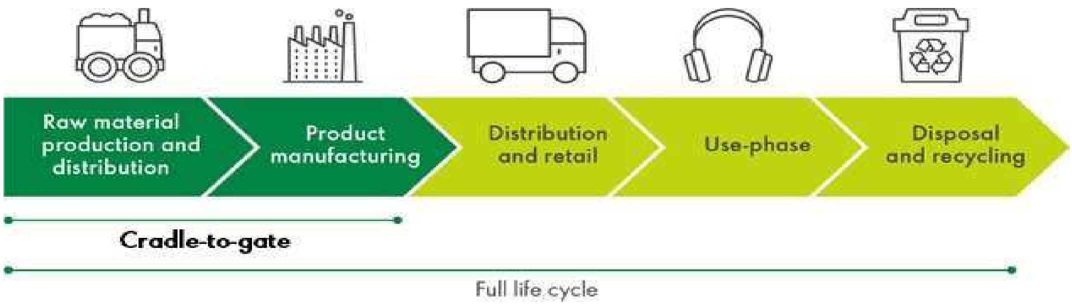
Products	Fossil-based product PCF*	Indicative Product PCF* with lower carbon feedstock		
		Excl. biogenic carbon credit	Embedded biogenic carbon credit	Net PCF, incl. biogenic carbon credit
SBPs	0.7			
100% HVO from soybean		1.2	-3.1	-1.9
37% HVO from soybean		37% x 1.2 = 0.4	37% x -3.1 = -1.1	37% x -1.9 = -0.7

** Units of tonne CO_2 equivalents (CO_2e), including CO_2, CH_4 and N_2O, per tonne of product.*

PCF Data table is generated on: 22nd July 2024

The fossil-based Product PCF data provided in this document is based on 2021 full year operating data.

HOW IS SHELL CHEMICALS PCF DATA CALCULATED?



Shell produces **intermediate** chemical products. As such, the Shell Chemicals PCF is a **'cradle-to-gate'** life cycle GHG metric that includes the following:

- Direct greenhouse gas (GHG) emissions from Shell production processes (i.e., Shell Scope 1 emissions, as per the GHG Protocol Corporate Standard, associated with manufacture of the product in question).
- GHG emissions associated with supply of energy imported to Shell production processes, including power, heat and steam (i.e., Shell Scope 2 emissions, as per the GHG Protocol Corporate Standard, associated with manufacture of the product in question); and
- GHG emissions associated with supply of imported materials and utilities, including feedstock and raw material production (i.e., Shell Scope 3 upstream emissions, as per the GHG Protocol Corporate Standard, associated with manufacture of the product in question).

Note that the Shell PCF data does not include transport or logistics to customer sites.

The Shell Chemicals PCF methodology is in line with the following standards:

- ISO 14040 (2006): Environmental management – Life cycle assessment – Principles and framework
- ISO 14044 (2006): Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 14067 (2018): Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification

Furthermore, the Shell Chemicals PCF methodology allocates GHG emissions to products in line with the allocation rules proposed by the "Life Cycle Thinking & Sustainability" Work Group of Plastics Europe, considering guidance from:

- World Business Council Sustainable Development (WBCSD) Chemicals: Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain,
- WBCSD Chemicals: Life Cycle Metrics for Chemical Products,
- PlasticsEurope: Eco-profiles and Environmental Product Declarations of the European Plastics Manufacturers.

The Shell Chemicals PCF methodology draws on several data sources. The heat and material balances associated with Shell manufacturing processes, as well as direct GHG emissions quantities, are based on primary data sources from our assets. Emission factors for process inputs, utilities, and fossil feedstocks that are imported to Shell assets are estimated from secondary data published in databases such as GaBi and EcoInvent. National average grid factors have been used to estimate GHG emission associated with imported electrical power. Indicative emission factors for lower carbon feedstocks are estimated from the EU Renewable Energy Directive 2018/2001 (RED II) - Annex V.
Shell Chemicals PCF data uses a functional unit of 1 metric tonne of product, and PCF data are presented in units of tonne CO_2 equivalents (CO_2e), including CO_2, CH_4 and N_2O emissions, per tonne of product.

PCF DATA FOR SHELL CHEMICAL PRODUCTS MADE FROM LOWER CARBON FEEDSTOCKS

How PCF is calculated for products manufactured using lower carbon feedstocks: For Shell Chemical's lower carbon product offerings, the GHG benefit of replacing conventional fossil fuel feedstocks with sustainable feedstocks (bio-based, circular, or bio-circular) are accounted for in the product PCF. This calculation is based on the difference in upstream GHG emissions from conventional feedstock production and delivery to Shell's plant gate (including the impact of biogenic CO_2 sequestered in the material, or avoided upstream emissions), versus the upstream GHG emissions from lower carbon feedstock production and delivery to Shell's plant gate.

Methodology used: The PCF benefit of conventional versus lower carbon feedstock is applied to the product PCF in a manner consistent with the principles of mass-balancing for sustainable product certification. This means that the CO_2e savings from lower carbon feedstock use is translated into a reduction from conventional fossil-derived product PCF by accounting for yield and process losses in line with sustainable feedstock mass balancing.

Indicative data: Note that the lower carbon feedstock PCF data, and the product PCF data they are used to generate here, are indicative only. The actual PCF of lower carbon feedstocks will vary significantly by producer and source, which will have a commensurate impact on the calculation of actual product PCF. Furthermore, the methods, standards and best practices associated with feedstock mass balancing and PCF calculation are evolving, and subsequent changes will also impact lower carbon PCF results.

Bio-feedstocks typically enable a reduction in life cycle GHG emissions relative to fossil-derived feedstocks. Bio-circular feedstocks are derived from waste materials, and therefore may enable life cycle GHG reductions greater than bio-feedstock. The GHG emissions associated with bio- and bio-circular feedstock reflect the biogenic CO_2 sequestered in the material (biogenic C content credit), which can result in a negative net PCF for the feedstock.

Circular feedstocks may enable a reduction in life cycle GHG emissions relative to conventional feedstocks, if using the feedstock for chemicals production means diverting it from another more GHG-intensive end-of-life fate (such as incineration or waste-to-energy generation). This can result in a negative net PCF for the feedstock.

HOW SHOULD THE BUYER USE PCF DATA PROVIDED BY SHELL?

Information is confidential and should only be used for your internal evaluation and calculation. Please contact your Shell representative if you have an alternative purpose in mind for the PCF information. Shell provides this PCF to the Buyer based upon information known by Shell at the date of data generation referenced; this PCF is not reflective of any information made known to Shell after such date.

Currently there is no industry standard for the calculation of chemical PCF values, and assumptions around emission factors can differ depending on databases used. PCF calculation therefore:

- may be subject to change as a result of changes in the product specifications, changes in emission factors, or otherwise
- may not be comparable against similar products by other manufacturers recognizing the differences in methodology and underlying assumptions
- may only be disclosed to third parties upon written approval by Shell

Shell does not make any representation or warranty, whether express or implied, regarding:

- the accuracy, completeness, reliability, or relevance of the PCF calculation
- any marketing, reporting or other claims, the Buyer may make based on the PCF calculation

Shell and its affiliated companies are not liable in any way for any loss, damages or expenses arising out of, or in connection with the use of the PCF calculations by the Buyer.

FUTURE VISION

Shell has an ambition to become a net-zero emissions energy business by 2050, which includes reduction of our Scope 1, 2 and 3 emissions. Our sustainable portfolio of chemical products and services are designed to meet the evolving needs of our customers. Learn more about Shell's sustainability journey and the steps we are taking here.

Marijne Timmers