

Product Carbon Footprint ekpzenhdl Report

Total CO2e
30.04 kg CO2e

Boundary
Factory Gate

Country
China

Key Metrics Overview

Total Footprint: 30.04 kg CO2e

Carbon Intensity: 30.04 kg CO2e/unit

Top Material Hotspot: Purchased Goods (12.25 kg CO2e)

Primary Emission Scope: Scope 3 (93.01%)

System Boundary & Standard

Functional Unit: 1.0 unit of exkpzenhdl

System Boundary: factory_gate - emissions up to the point the product leaves the manufacturing facility.

Accounting Standard: GHG Protocol - globally recognized standard for GHG accounting, including 2026 LSR Standard updates and prospective 95% Scope 3 coverage.

GHG Protocol Scope Breakdown

Scope 1 (Direct Emissions): 0.00 kg CO₂e (0.00%)

Scope 2 (Purchased Electricity): 2.10 kg CO₂e (6.99%)

Scope 3 (Value Chain): 27.94 kg CO₂e (93.01%)

Scope 3 covers raw material, transport, product use, and end-of-life.

Lifecycle Carbon Footprint Breakdown

The product's lifecycle emissions are categorized into key stages from material acquisition to end-of-life. Understanding this breakdown highlights critical areas for emission reduction efforts.

Materials	40.75%
Production (Scope 2)	6.99%
Logistics	1.27%
Use Phase	49.90%
End-of-Life	1.03%

Material Carbon Impact

The Bill of Materials (BOM) plays a crucial role in the overall carbon footprint. Here are the top contributors from the material acquisition phase:

Aluminum Casing	7.50 kg CO2e
Circuit Board Assembly	3.00 kg CO2e
ABS Plastic Shell	0.75 kg CO2e

Note: Percentages for material impact are relative to the 'Purchased Goods and Services' category.

Highlights & Hotspots

Based on the analysis, the most significant emission hotspots for exkpenhdl are:

- **Use of Sold Products:** This represents the largest share (49.90%) of the product's footprint, driven by energy consumption over its 5-year lifespan.
- **Purchased Goods and Services:** Material acquisition and processing contribute significantly (40.75%), emphasizing the importance of sustainable sourcing and material efficiency.
- **Purchased Electricity (Production):** Manufacturing energy in China, contributing 6.99%, remains a notable factor, even with 30% illustrative renewable energy usage.

Context & Reliability

This report uses illustrative data due to placeholder parameters. Actual PCF calculations would require precise primary data and verified emission factors for true accuracy.

The analysis anticipates the **GHG Protocol's 2026 Land Sector and Removals (LSR) Standard** and aims for **95% Scope 3 coverage**, reflecting evolving requirements for comprehensive reporting.

Recommendations: How to Reduce Footprint

Optimize Use Phase:

Invest in energy-efficient design for exkpxzhdl to significantly reduce energy consumption during its lifespan.

Sustainable Sourcing:

Prioritize suppliers offering low-carbon materials, recycled content, or those using renewable energy in their production. Engage for primary data.

Renewable Energy Transition:

Increase the share of renewable energy in manufacturing operations. Explore purchasing renewable energy certificates or on-site generation.

Enhance Circularity:

Strengthen take-back programs and explore innovative recycling technologies to maximize recyclability and reuse of product components.

Data Improvement:

Implement robust systems for collecting primary data across the value chain, crucial for accuracy and compliance with evolving GHG Protocol requirements.

carboncalcpcf.com - Product Carbon Footprint Analysis for exkpzenhdl. All calculations are illustrative.