

Product Carbon Footprint for ozsypjurhk

Company: tdsquyyltz | **Consultant:** justjequdp

Standard: GHG Protocol | **System Boundary:** Cradle-to-Grave

carboncalcpcf.com

45.51 kg CO₂e

Total Footprint

45.51

kg CO₂e / 1.0 unit

Carbon Intensity

18.58

kg CO₂e / kg Product

Top Material Hotspot

PCB

12.00 kg CO₂e

Primary Emission Scope

Scope 3

44.74 kg CO₂e (98.3%)

Lifecycle Stage Breakdown

Contribution of each lifecycle stage to the total carbon footprint. End-of-Life shows net reduction.



- Materials
- Production (Scope 1 & 2)
- Upstream Transport
- Downstream Transport
- Use Phase
- End-of-Life (Net Reduction)

Top Material Carbon Impact

Key materials and their contribution to the overall footprint (total material emissions: 18.12 kg CO2e).

Printed Circuit Board (PCB)		12.00 kgCO2e
Aluminum Frame		2.55 kgCO2e
ABS Plastic Casing		1.76 kgCO2e
Lithium-ion Battery		1.50 kgCO2e
Packaging (Cardboard)		0.16 kgCO2e
Copper Wiring		0.15 kgCO2e

Key Highlights & Hotspots

- **Materials dominate:** Raw material acquisition and processing contribute ~40% (18.12 kg CO₂e) of the total footprint, with the Printed Circuit Board (PCB) being the largest single contributor.
- **Logistics is critical:** Downstream transportation (last-mile delivery) accounts for a significant ~33% (15.00 kg CO₂e) of emissions, highlighting a high impact from product distribution.
- **Use phase matters:** The product's energy consumption during its 5-year lifespan contributes ~27% (12.50 kg CO₂e) to the total, driven by assumed user grid electricity mix.

Recommendations for Reduction

- **Material Optimization:** Source lower-carbon alternatives for PCBs and aluminum, or reduce material quantities through design-for-lightweighting.
- **Logistics Efficiency:** Optimize distribution networks, consolidate shipments, and explore electric or cargo bike options for last-mile delivery.
- **Product Energy Efficiency:** Enhance the energy efficiency of 'ozsypjurhk' and encourage users to power with renewable energy sources.
- **Circular Economy:** Strengthen take-back and recycling programs, aiming for higher recyclability and improved product repairability.
- **Renewable Energy Adoption:** Increase the percentage of renewable energy used in manufacturing beyond the current 50% to cut Scope 2 emissions further.