carboncalcpcf.com

Product Carbon Footprint for istqnvgqgv

Total PCF: 49.3 kg CO2e

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49.3 kg CO2e

Per 1.0 unit of istqnvgqgv

Accounting Standard

GHG Protocol

Cradle-to-Grave Scope

Top Emission Hotspot

Use Phase

Approx. 81% of positive emissions

Primary Production Country

China

Europe Focused Supply Chain

Lifecycle Stage Breakdown

Materials	11.5 kg CO2e (21.35%)
Production Energy	1.75 kg CO2e (3.25%)
Transport	0.61 kg CO2e (1.13%)
Use Phase	40.0 kg CO2e (74.27%)
End-of-Life (Net Credit)	-4.56 kg CO2e

Material Carbon Impact (Illustrative BOM)

Steel casing	5.0 kg CO2e (43.48%)
Plastic housing	3.5 kg CO2e (30.43%)
Circuit Board	3.0 kg CO2e (26.09%)

Total Material Emissions: 11.5 kg CO2e. Note: Based on illustrative Bill of Materials data.

Highlights: Emission Hotspots

- The **Use Phase** is the most significant contributor, accounting for approximately 81% of positive emissions, emphasizing the need for energy-efficient product design and user behavior.
- **Material Acquisition** is the second largest hotspot, contributing roughly 23% of positive emissions, particularly from materials like steel and plastics.
- **Production Energy** emissions, though a smaller portion at approximately 4% of positive emissions, highlight the importance of integrating renewable energy in manufacturing processes.

Recommendations for Carbon Reduction

1. **Use Phase Optimization:** Prioritize design improvements for energy efficiency during the product's use, explore low-power modes, extend product lifespan, and encourage sustainable user practices.
2. **Material Innovations:** Investigate alternative, lower-carbon materials for components like the casing and housing, focusing on recycled content, bio-based materials, and lightweighting strategies.
3. **Supply Chain Engagement:** Collaborate with suppliers to understand and reduce their upstream emissions, especially for high-impact materials.
4. **Renewable Energy Integration:** Increase renewable energy usage at manufacturing facilities and explore options for renewable energy certificates or power purchase agreements in the supply chain.
5. **Circular Economy Design:** Leverage existing circular/take-back programs and enhance recyclability to maximize material recovery and minimize end-of-life impacts.