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Product Carbon Footprint for "ghsnpmexnq"

carboncalcpcf.com

20.210 kg CO2e

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Total Carbon Footprint

20.210 kg/unit

Carbon Intensity (per functional unit)

Aluminum Casing

Top Material Hotspot (3.35 kg CO2e)

Scope 3

Primary Emission Scope (19.82 kg CO2e)

Lifecycle Stage Breakdown

Materials & Upstream Transport	26.12%
Manufacturing (Energy & Direct)	1.58%
Downstream Transportation	0.98%
Product Use Phase	71.32%
End-of-Life (Net Benefit)	-4.327 kg CO2e

Note: Percentages above are based on gross positive emissions (24.537 kg CO2e) for contribution breakdown. End-of-Life represents a net carbon reduction.

Material Composition Carbon Impact

Aluminum Casing	3.35 kg
PCB	1.20 kg
ABS Plastic	0.70 kg
Li-ion Battery	0.60 kg
Copper Wiring	0.28 kg
Packaging	0.24 kg

Total Material Emissions (Scope 3 Upstream): 6.37 kg CO2e

Highlights & Emission Hotspots

- The **Product Use Phase** is the dominant emission hotspot, contributing approximately 86.6% of the product's gross footprint.
- **Material Acquisition & Production** accounts for a significant portion (31.5%) of gross emissions, with Aluminum and Lithium-ion Battery being key contributors.
- **End-of-Life Treatment**, driven by high recyclability (85%) and established take-back programs, provides a substantial net carbon benefit, effectively reducing the overall PCF.

Recommended Action Plan

- ✓ **Optimize Use Phase Efficiency:** Focus R&D on significantly reducing the product's energy consumption during its lifespan through low-power modes and more efficient components.
- ✓ **Material Decarbonization:** Prioritize sourcing lower-carbon alternatives for high-impact materials, particularly aluminum, plastics, and battery components.
- ✓ **Enhance Circularity:** Expand and promote existing take-back programs and design for easier disassembly, repair, and upgradeability to maximize material reuse and product longevity.