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carboncalcpcf.com

Product Carbon Footprint for hkvgutqgkq

19.170

kg CO_2e

Report Generated: May 19, 2026

Standard: GHG Protocol | Boundary: Cradle-to-Gate + Use Phase + End-of-Life

Key Sustainability Metrics

TOTAL PRODUCT FOOTPRINT

19.170

kg CO_2e

CARBON INTENSITY

19.170

kg CO_2e / unit

PRIMARY EMISSION STAGE

Use Phase

65.2% of total

TOP MATERIAL HOTSPOT

Aluminum Casing

60.3% of material impact

Lifecycle Stage Emissions Breakdown

Note: End-of-Life provides a net credit of -0.4675 kg CO_2e, reducing the overall footprint.

- Raw Material Acquisition
- Manufacturing Energy
- Transport & Logistics
- Use Phase

Material Carbon Impact

- Aluminum Casing
- Plastic Components
- Circuit Board
- Copper Wiring

Highlights & Key Findings

- The **Use Phase** is the dominant emission hotspot, accounting for 65.2% of the total PCF, driven by product energy consumption.
- **Raw Material Acquisition & Processing** contributes significantly (31.8%), with Aluminum Casing being the largest single material impact.
- High product recyclability (70%) and active circular programs lead to a **net carbon credit at End-of-Life**, offsetting some emissions.

Recommendations for Reduction

- **Enhance Use Phase Efficiency:** Focus on product design to reduce energy consumption during its operational lifespan.
- **Material Optimization:** Explore lower-carbon alternatives, increase recycled content, or optimize material usage, especially for high-impact components.
- **Supply Chain Engagement:** Collaborate with suppliers to promote renewable energy adoption and reduce emissions from upstream processes.
- **Strengthen Circular Economy:** Further develop and promote take-back and recycling programs to maximize material recovery.