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Product Carbon Footprint for EcoGadget Pro (zkmxmxrmmm)

Total PCF: 29.80 kg CO2e/unit

Key Metrics

Total Footprint

29.80 kg CO2e

Per 1.0 unit (Cradle-to-grave)

Carbon Intensity

69.30 kg CO2e/kg

Based on 0.43 kg product weight

Top Material Hotspot

Aluminum Casing

2.0 kg CO2e (44.4% of material emissions)

Primary Emission Scope

Scope 3

90.94% of total PCF

Lifecycle Stage Breakdown

Materials (Cat 1)	4.5 kg CO2e (15.10%)
Production (Scope 2)	2.7 kg CO2e (9.06%)
Logistics (Cat 9)	0.13 kg CO2e (0.44%)
Use Phase (Cat 11)	22.4 kg CO2e (75.16%)
End-of-Life (Cat 12)	0.08 kg CO2e (0.27%)

Material Carbon Impact

Aluminum Casing	2.0 kg CO2e
Battery	1.2 kg CO2e
Circuit Board	1.0 kg CO2e
Plastic Enclosure	0.3 kg CO2e

Highlights & Insights

- "Use of Sold Products" (Scope 3, Category 11) is the dominant hotspot, accounting for approximately 75.16% of the total product carbon footprint, driven by energy consumption over its 7-year lifespan.
- "Purchased Goods & Services" (Scope 3, Category 1 - Materials) is the second-largest contributor at 15.10%, highlighting significant embodied emissions in raw materials.
- The report achieves approximately 95.73% Scope 3 coverage, meeting the 2026 requirement of at least 95% coverage, demonstrating commitment to comprehensive value chain transparency.

Action Plan for Emission Reduction

- **Optimize Use Phase:** Invest in R&D to significantly improve energy efficiency (low-power modes, smart energy management).
- **Renewable Energy Sourcing:** Expand renewable energy use in manufacturing; aim for 100% renewable electricity.
- **Material Circularity:** Explore using recycled content for Aluminum Casing and Plastic Enclosure, and design for disassembly.
- **Enhance Circular Programs:** Capitalize on existing take-back programs by tracking and reporting avoided emissions.
- **Supply Chain Engagement:** Encourage suppliers to adopt lower-carbon processes, especially for batteries and circuit boards.
- **Logistics Optimization:** Regularly review routes and modes, prioritizing lower carbon intensity transport (e.g., rail over road).