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carboncalcpcf.com

Product Carbon Footprint: **nkthvxommw**

Total PCF for 1.0 unit

39.07 kg CO₂e

Total Footprint

39.07 kg CO2e

for 1.0 unit of nkthvxommw

Carbon Intensity

39.07 kg CO2e/unit

Calculated per functional unit

Top Material Hotspot

Aluminum Casing

Contributing 4.00 kg CO2e to materials impact

Primary Emission Scope

Scope 3

Value Chain Emissions (82.2%)

Key Emission Hotspots

- **Downstream Transportation (Last-Mile Delivery):** This stage represents a significant portion of the total PCF, approximately 31.9%, indicating its disproportionately high impact.
- **Materials Acquisition:** The embodied carbon in purchased goods and services, particularly high-impact materials like aluminum and batteries, contributes roughly 28.0% of the total footprint.
- **Use Phase:** The energy consumption during the product's lifespan is a substantial contributor, making up about 23.2% of emissions, highlighting the importance of energy-efficient design.

Recommendations for Reduction

- **Optimize Last-Mile Logistics:** Investigate opportunities for more efficient last-mile delivery, such as route optimization or the use of electric vehicles.
- **Sustainable Material Sourcing:** Explore alternative materials with lower embodied carbon, increase recycled content, and engage with suppliers to reduce their emissions.
- **Enhance Product Energy Efficiency:** Focus on design improvements to significantly reduce energy consumption during the product's use phase.
- **Increase Renewable Energy Sourcing:** Continuously work to increase the share of renewable electricity used in manufacturing operations, especially in regions with carbon-intensive grids.
- **Strengthen Circular Economy Initiatives:** Expand take-back programs and further improve recyclability to maximize material value and reduce end-of-life impacts.

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