carboncalcpcf.com

Product Carbon Footprint for siimlpqxvx

Total PCF: 50.50 kgCO2e

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50.50 kgCO2e

Carbon Intensity (per unit)

50.50 kgCO2e/unit

Top Material Hotspot

Aluminum Alloy

Primary Emission Scope

Scope 3 (91.9%)

Lifecycle Stage Breakdown

Raw Materials & Pre-processing	54.34 kgCO2e
Production Phase	3.10 kgCO2e
Transport & Distribution	1.50 kgCO2e
Use Phase	25.00 kgCO2e
End-of-Life (Net Savings)	-34.44 kgCO2e

Material Carbon Impact

Aluminum Alloy	42.5 kgCO2e
ABS Plastic	6.0 kgCO2e
Circuit Board (PCB)	5.0 kgCO2e
Packaging Cardboard	0.3 kgCO2e

Key Insights

- **Raw Material Acquisition** accounts for the largest share of positive emissions (53.8 kgCO2e), primarily driven by Aluminum Alloy.
- The **Use Phase** contributes significantly with 25.0 kgCO2e over the product's lifespan.
- Strong **End-of-Life recyclability** and circular programs result in substantial avoided emissions, creating a net saving of 34.44 kgCO2e.

Recommendations for Carbon Reduction

- **Source Lower-Carbon Materials:** Prioritize suppliers with lower emission factors for raw materials, especially for high-impact components like Aluminum Alloy.
- **Enhance Product Energy Efficiency:** Improve the product's energy consumption during the use phase to reduce its significant operational footprint.
- **Optimize Logistics:** Collect specific data for all transport legs to identify and implement more efficient and lower-carbon transportation modes.
- **Maximize Circularity:** Continue to invest in and expand take-back and recycling programs, exploring opportunities for greater material recovery beyond current levels.
- **Supplier Engagement:** Collaborate with key suppliers to encourage their transition to renewable energy sources in their manufacturing processes.