ywugfvqgmi Carbon Footprint

Product PCF Analysis by mfekrftpro

31.96 kg CO2e

Total Product Footprint

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31.96 kg CO2e

Carbon Intensity

31.96 kg CO2e/unit

Top Material Hotspot

Aluminum Heat Sink (1.20 kg CO2e)

Primary Emission Scope

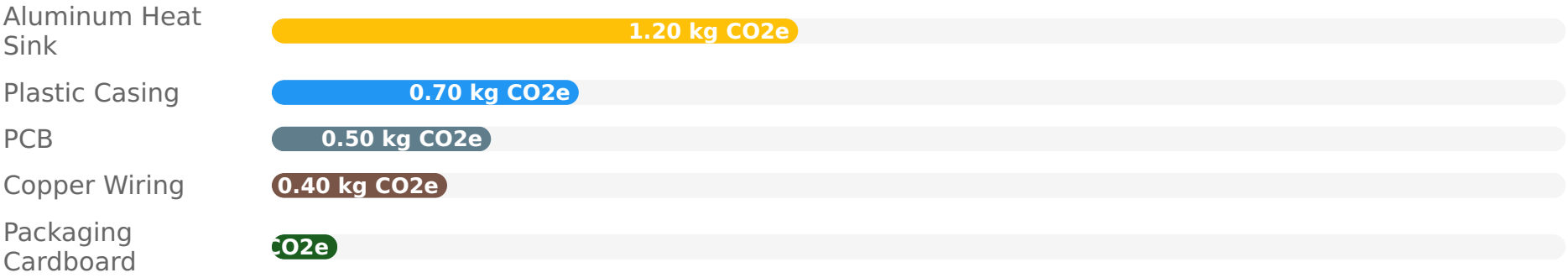
Scope 3 (99.7%)

Emission Breakdowns

Lifecycle Stage Contribution

GHG Protocol Scope Breakdown

Material Carbon Impact



Key Insights

- The **Use Phase** (20.0 kg CO2e) and **Last-Mile Delivery** (10.0 kg CO2e) are the most significant emission hotspots, accounting for over 90% of the total PCF.
- **Scope 3 emissions** dominate the footprint at 99.7%, highlighting the importance of value chain decarbonization.
- **Aluminum and Plastic components** are the largest material contributors to upstream emissions.

Recommendations for Reduction

1. **Optimize Use Phase Energy Efficiency:** Implement low-power modes and design for energy-efficient operation to reduce the largest emission source.
2. **Decarbonize Last-Mile Delivery:** Engage logistics partners for electric vans or cargo bikes, and optimize delivery routes to cut transport emissions.
3. **Sustainable Material Sourcing:** Prioritize recycled content, bio-based materials, or lower-impact alternatives for aluminum and plastics.
4. **Enhance Circularity:** Leverage the 80% recyclability and existing take-back programs; explore design-for-disassembly and remanufacturing.
5. **Improve Data Quality:** Collaborate with suppliers for primary emission data and establish robust internal data collection systems.

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