

mvslmyvepd

Product Carbon Footprint (PCF) Overview

Total Product Carbon Footprint

21.52

kgCO2e / unit

System Boundary

factory_gate

GHG Protocol Standard

Carbon Intensity

21.52

kgCO₂e / unit

Top Material Hotspot

Aluminum Casing

4.00 kgCO₂e

Primary Emission Scope

Use Phase

69.70% of PCF (Scope 3)

Lifecycle Stage Breakdown

Use Phase	15.00 kgCO2e (69.70%)
Materials & Processing	5.40 kgCO2e (25.09%)
Manufacturing (Scope 1 & 2)	0.83 kgCO2e (3.83%)
End-of-Life	0.15 kgCO2e (0.70%)
Logistics (Transport)	0.15 kgCO2e (0.67%)

Material Carbon Impact

Aluminum Casing	4.00 kgCO2e
ABS Plastic Housing	1.05 kgCO2e
Electronic Components	0.20 kgCO2e
Packaging (Recycled Cardboard)	0.15 kgCO2e

Key Insights & Highlights

- The **Use Phase** dominates the product's carbon footprint, accounting for nearly **70%** of total emissions, largely due to electricity consumption over its assumed 5-year lifespan.
- **Material Acquisition and Processing** represent the second largest hotspot at approximately **25%**, with Aluminum Casing being the most significant contributor within this stage.
- Manufacturing emissions (Scope 1 & 2) contribute a smaller but still notable **3.83%**, indicating opportunities for further renewable energy integration at the production facility.

Recommendations for Impact Reduction

- **Enhance Energy Efficiency:** Prioritize design innovations for mvslmyvepd to drastically reduce energy consumption during its use phase, potentially through lower-power components or smart energy management features.
- **Optimize Material Sourcing:** Investigate and integrate alternative materials with lower embodied carbon, increase recycled content, and engage with suppliers to improve upstream processing efficiency for components like aluminum.
- **Boost Renewable Energy in Production:** Further increase the percentage of renewable electricity utilized in manufacturing facilities, particularly in China, to reduce Scope 2 emissions.