html

rigythupko Carbon Footprint

Product Carbon Footprint Analysis by carboncalcpcf.com

70.40 kg CO2e

Total Product Footprint

Total Footprint (per unit)

70.40 kg CO2e

Functional Unit: 1.0 unit

Primary Emission Scope

Scope 3 (Value Chain)

Dominant by Downstream Transport

Top Material Hotspot

Aluminium Casing

3.35 kg CO2e (63.03% of material emissions)

Production Country

China

40% Renewable Energy Use

Detailed Analysis

Lifecycle Stage Breakdown

Logistics	25.16 kg CO2e (35.73%)
Use of Products	22.50 kg CO2e (31.96%)
Production Energy (Scope 2)	18.62 kg CO2e (26.44%)
Materials (Purchased Goods)	5.32 kg CO2e (7.55%)

Note: End-of-Life accounts for -1.19 kg CO2e due to 70% recyclability and circular economy credits.

Material Carbon Impact Breakdown

Aluminium Casing	3.35 kg CO2e (63.03%)
Circuit Board	1.50 kg CO2e (28.22%)
Plastic Components	0.42 kg CO2e (7.90%)
Packaging Cardboard	0.05 kg CO2e (0.85%)

Total Material Emissions: 5.32 kg CO2e.

Highlights: Emission Hotspots

- **Logistics is the Largest Contributor:** Downstream transportation, especially last-mile delivery, accounts for 25.04 kg CO2e, making it the highest emission hotspot in the product's lifecycle.
- **Significant Use Phase Impact:** Energy consumption during the 5-year product lifespan contributes 22.50 kg CO2e, highlighting the importance of product energy efficiency.
- **Production Energy (China) is Key:** Despite 40% renewable energy use, the remaining grid electricity for production in China contributes 18.62 kg CO2e, due to the national grid's emission factor.
- **Aluminium Casing Dominates Material Footprint:** The Aluminium Casing is the single largest material contributor at 3.35 kg CO2e, representing over 63% of total material emissions.

Recommendations for Carbon Reduction

1. **Decarbonize Production Energy:** Increase renewable energy procurement at the manufacturing facility beyond 40% to significantly reduce Scope 2 emissions.
2. **Optimize Logistics & Last-Mile Delivery:** Investigate more efficient transport modes, optimize load factors, and explore electrification of last-mile fleets to tackle the largest hotspot.
3. **Enhance Product Energy Efficiency:** Redesign 'rigythupko' to minimize energy consumption during its use phase, reducing long-term environmental impact.
4. **Material Substitution & Circularity:** Explore lower-carbon material alternatives for the Aluminium Casing and strengthen take-back programs to maximize component reuse and high-quality recycling.
5. **Engage Supply Chain for Upstream Reductions:** Collaborate with material suppliers to promote renewable energy adoption and more efficient manufacturing processes, especially for high-impact components.