

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: knysjthyho | **Quantity:** 1.0 unit | **Boundary:** factory_gate

Total Carbon Footprint: 47.73 kg CO₂e

Net Footprint

47.73

kg CO2e / unit

Primary Emission Scope

Scope 3

Materials & Use Phase

Top Material Hotspot

Steel

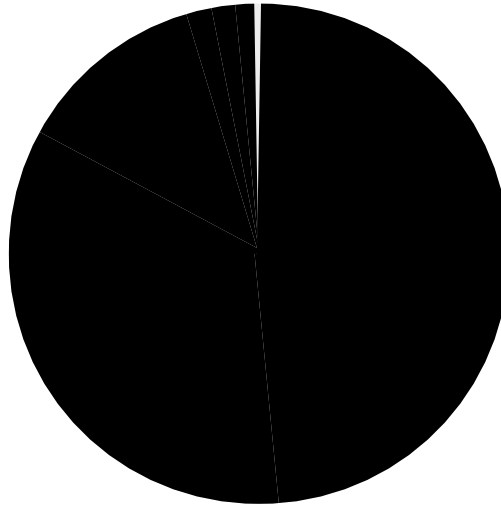
25.0 kg CO2e

EoL Carbon Credit

-10.40

kg CO2e / unit

Lifecycle Stage Breakdown



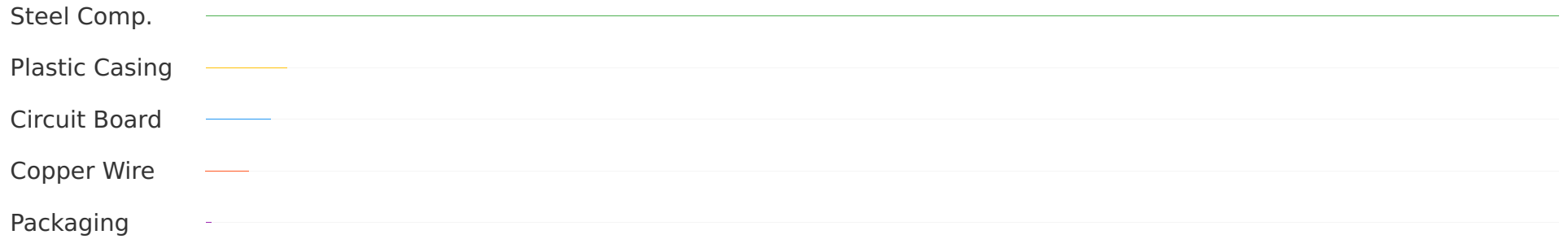
- Materials (49.20%)
- Use Phase (34.41%)
- Other Scope 3 (12.04%)
- Production (1.72%)
- Upstream Transport (1.49%)
- Downstream Transport (1.14%)

Note: Percentages above represent contribution to gross positive emissions. A significant End-of-Life carbon credit of -10.40 kg CO₂e is applied to achieve the total net footprint.

CO₂e

CO₂e

Material Carbon Impact



Key Highlights

- ✓ **Raw Materials Dominance:** Nearly half (49.20%) of the gross emissions originate from raw material acquisition, with steel components being the primary contributor.
- ✓ **Significant Use Phase Impact:** The product's energy consumption during its 5-year operational lifespan accounts for a substantial 34.41% of the total gross carbon footprint.
- ✓ **Circular Economy Effectiveness:** High recyclability (80%) combined with a robust "Product Take-back Program" results in a considerable net carbon credit of -10.40 kg CO₂e at end-of-life.

Action Plan for Reduction

- 1. Material Optimization:** Investigate and implement lower-carbon alternatives (e.g., green steel, recycled plastics) and pursue lightweighting strategies without compromising product integrity.
- 2. Enhance Product Energy Efficiency:** Focus on redesigning knysjthyho to significantly reduce its energy consumption during the operational lifespan and actively promote energy-efficient usage to consumers.
- 3. Strengthen Circularity Initiatives:** Further expand and promote the "Product Take-back Program" to maximize material recovery, reuse, and explore design-for-disassembly for easier recycling and repair.
- 4. Increase Renewable Energy Procurement:** Accelerate the transition to 100% renewable energy at the production facility beyond the current 70% by investing in on-site generation or power purchase agreements.
- 5. Optimize Supply Chain Logistics:** Engage with key suppliers to encourage their decarbonization efforts, and strategically optimize transportation routes and modes, prioritizing lower-carbon options for both inbound and outbound logistics.