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Polyamide Resin Carbon Footprint Dashboard

Total PCF for 1.0 kg: **7.701 kg CO2e**

Total Footprint

7.701 kg CO2e

Carbon Intensity

7.701 kg CO2e / kg

Top Material Hotspot

Caprolactam Production

Primary Emission Scope

Scope 3 (69%)

Emission Breakdown by Source



Breakdown of total emissions by key contributing factors for 1.0 kg of Polyamide Resin.

Emissions by GHG Protocol Scope

Scope 3: 69.09% (5.321 kg CO₂e)

Scope 2:
27.27%
(2.10 kg CO₂e)



Distribution of greenhouse gas emissions across Scope 1, 2, and 3 categories.

Highlights & Key Insights

- Caprolactam production constitutes the dominant carbon hotspot, contributing approximately 68% of the total Product Carbon Footprint.
- Purchased electricity at the Indian manufacturing facility accounts for roughly 27% of emissions, primarily due to the carbon intensity of the local grid mix.
- The report adheres to the GHG Protocol and incorporates considerations for the 2026 Land Sector and Removals (LSR) Standard, aiming for comprehensive Scope 3 coverage.

Recommendations for Emission Reduction

Decarbonize Monomer Production: Engage with caprolactam suppliers to promote N₂O abatement technologies and explore low-carbon or bio-based feedstocks.

Transition to Renewable Energy: Increase procurement of renewable electricity (e.g., PPAs, on-site solar) for the Indian manufacturing facility.

Optimize Process Efficiency: Implement energy efficiency measures across polymerization and compounding processes to reduce overall energy consumption.

Improve Supply Chain Data: Collaborate with key suppliers to obtain primary, supplier-specific emission data for enhanced accuracy in Scope 3 reporting.

Product: Polyamide resin | Quantity: 1.0 kg | System Boundary: Cradle-to-Gate (factory_gate) | Production Country: India | Standard: GHG Protocol

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