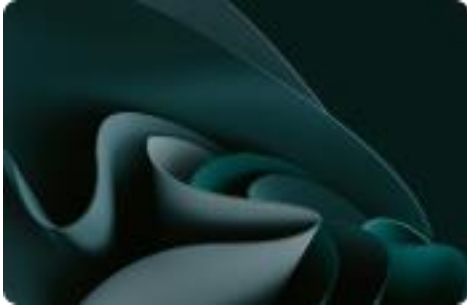


Life Cycle Analyses

PMRAIN N



Summary



01 | Methodology



02 | Results

01

Methodology

Environmental Impact Assessment

| | |
|---|---|
| <p>Functional unit</p> | <p>The functional unit is a quantified performance of a product system for use as a reference unit. One of the primary purposes of a functional unit is to provide a reference to which the input and output data are normalized (in a mathematical sense). Therefore, the functional unit shall be clearly defined and measurable.</p> |
| <p>Impact Indicator</p> | <p>The impact is measured through the "IPCC 2021 GWP100" method</p> |
| <p>Electricity impact calculation method</p> | <p>Following guidelines from the GHG Protocol, the impact of electricity is calculated using the location-based approach. This means that the emission factors used represent the average annual carbon intensity of the power grid in the country the processes take place in.</p> |
| <p>Life Cycle Analyses</p> | <p>Cradle to grave</p> |

Emission Factor Inventory

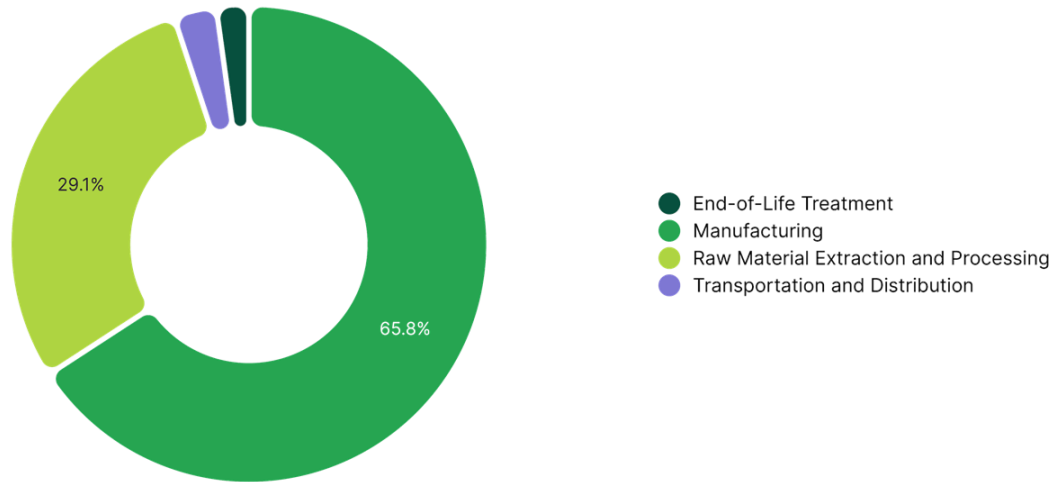
| Num | Emission Factor | Source | Value | Unit |
|-----|--|-------------------|---------------|------|
| 1 | Steel, low-alloyed Ordinary transforming activity | ECOINVENT 3.10 | 2.203301567 | kg |
| 2 | Electricity Total (Scope 2 & 3) People's Republic of China | IEA 2023 | 0.7231 | kWh |
| 3 | Freight Boat From CN to FR | WELOW EXPERTS 1.0 | 0.25227278 | kg |
| 4 | Waste reinforcement steel Ordinary transforming activity | ECOINVENT 3.10 | 0.06273427595 | kg |

02

Results

Umbrella stand

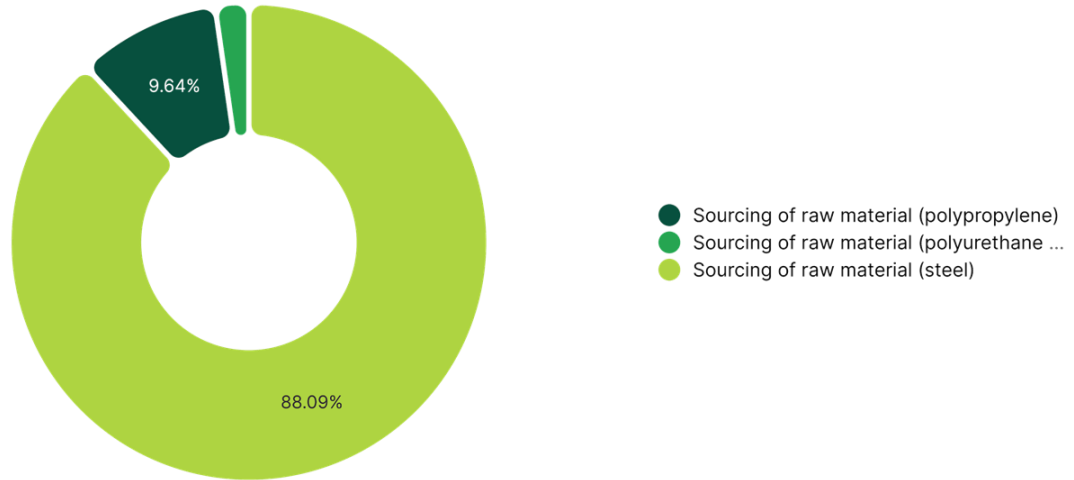
Climate Change



| Step | Impact (kg CO ₂ eq) | Percentage (%) |
|--|--------------------------------|-----------------|
| Manufacturing | 5.19 | 69.04 % |
| Raw Material Extraction and Processing | 2.06 | 27.40 % |
| Transportation and Distribution | 0.21 | 2.85 % |
| End-of-Life Treatment | 0.05 | 0.71 % |
| TOTAL | 7,52 | 100.00 % |

Umbrella stand

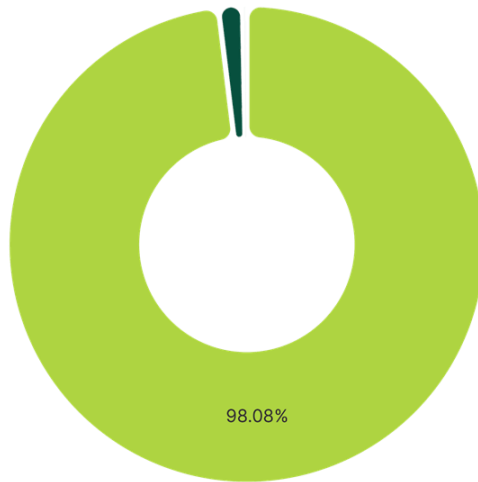
Climate Change - Raw Material Extraction and Processing



| Activity | Emission Factor Num | Quantity | Impact (kg CO ₂ eq) | Percentage (%) |
|----------------------------------|---------------------|----------|--------------------------------|----------------|
| Sourcing of raw material (steel) | 1 | 0.94 | 2.06 | 100.00 % |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 2.06 | 100.00 % |

Umbrella stand

Climate Change - Manufacturing

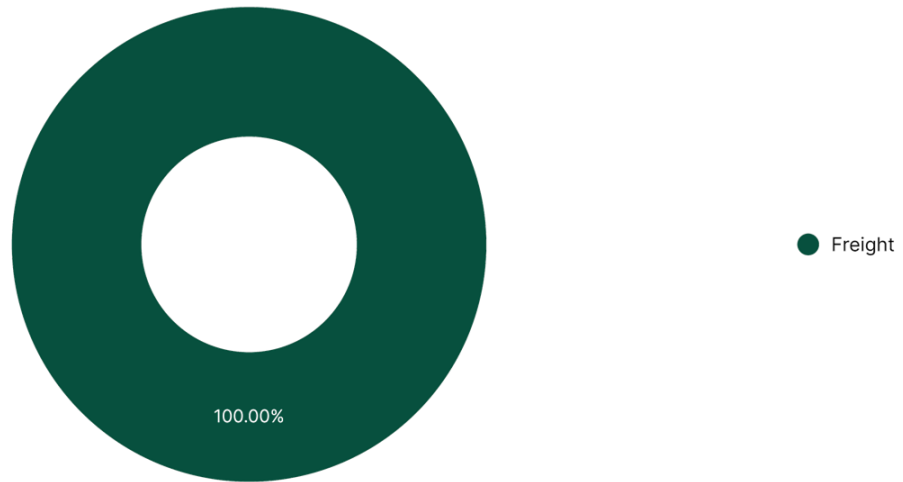


- Electricity usage during material transfo...
- Electricity usage during material transfo...
- Electricity usage during material transfo...

| Activity | Emission Factor Num | Quantity | Impact (kg CO ₂ eq) | Percentage (%) |
|--|---------------------|----------|--------------------------------|----------------|
| Electricity usage during material transformation (steel) | 2 | 7.18 | 5.19 | 100.00 % |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 5.19 | 100.00 % |

Umbrella stand

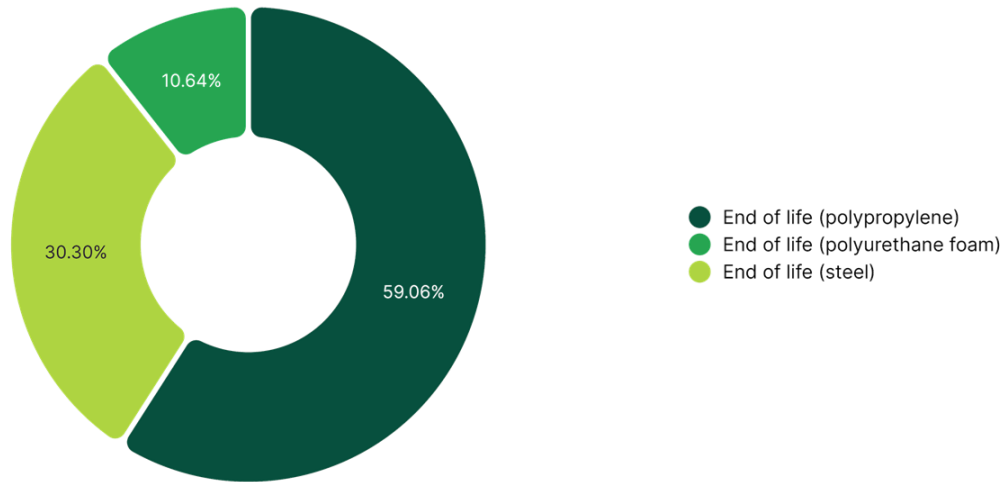
Climate Change - Transportation and Distribution



| Activity | Emission Factor Num | Quantity | Impact (g CO ₂ eq) | Percentage (%) |
|----------|---------------------|----------|-------------------------------|----------------|
| Freight | 3 | 0.85 | 214.43 | 100.00 % |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 214.43 | 100.00 % |

Umbrella stand

Climate Change - End-of-Life Treatment



| Activity | Emission Factor Num | Quantity | Impact (g CO ₂ eq) | Percentage (%) |
|---------------------|---------------------|----------|-------------------------------|----------------|
| End of life (steel) | 4 | 0.85 | 53.32 | 100.00 % |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTAL | | | 53.32 | 100.00 % |

