# Life Cycle Analyses

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# Summary



**01** Methodology



02 Results



# Methodology

### **Environmental Impact Assessment**

#### **Functional unit**

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.

### **Impact Indicator**

The impact is measured through the "IPCC 2021 GWP100" method

# Electricity impact calculation method

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.

### Life Cycle Analyses

Cradle to grave





# **Emission Factor Inventory**

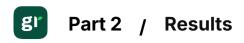
Nu m	Emission Factor	Source	Value	Unit
1	Tube insulation, elastomere   Ordinary transforming activity	ECOINVENT 3.10	4.8862661	kg
2	Electricity   Total (Scope 2 & 3)   People's Republic of China	IEA 2023	0.7231	kWh
3	Freight   Boat   From CN to FR	WELOW EXPERTS 1.0	0.2522727 8	kg
4	Residues, MSWI, waste rubber, unspecified   Ordinary transforming activity	ECOINVENT 3.10	0.3380807 553	kg



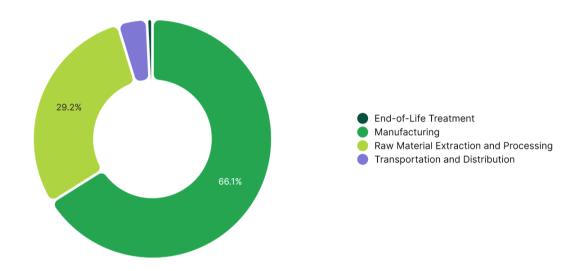




# Results



## Climate Change



Step	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Raw Material Extraction and Processing	268.74	63.26 %
Manufacturing	126.54	29.79 %
End-of-Life Treatment	16.9	3.98 %
Transportation and Distribution	12.61	2.97 %

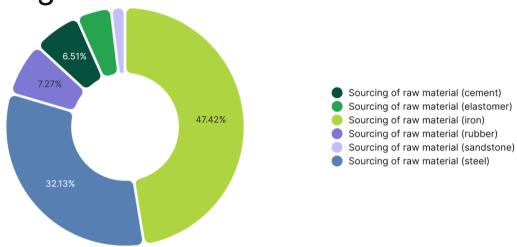
TOTAL 4	25	100.00 %
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Climate Change - Raw Material Extraction and



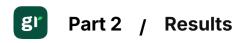


Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (elastomer)	1	0.06	268.74	100.00 %

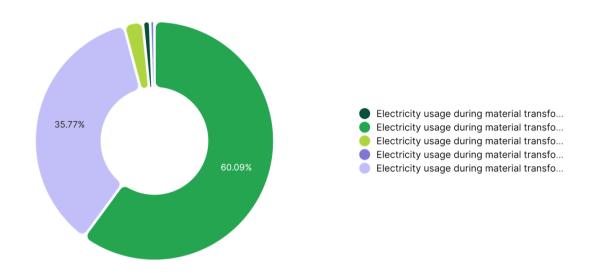
TOTAL 268.74 100.00 %







## Climate Change - Manufacturing



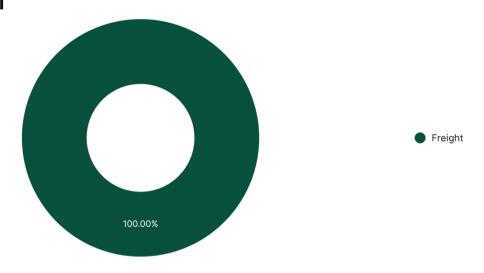
Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Electricity usage during material transformation (elastomer)	2	O.18	126.54	100.00 %

TOTAL	126.54	100.00 %
TOTAL	126.54	100.00 %





# Climate Change - Transportation and Distribution



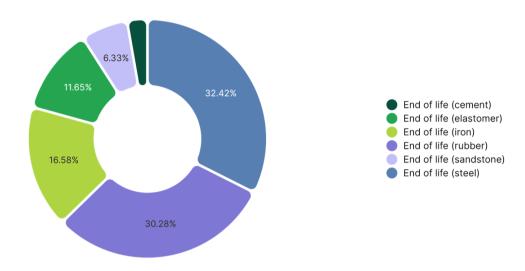
Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Freight	3	0.05	12.61	100.00 %

TOTAL 12.61 100.00 %





## Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
End of life (elastomer)	4	0.05	16.9	100.00 %

TOTAL 16.9 100.00 %





