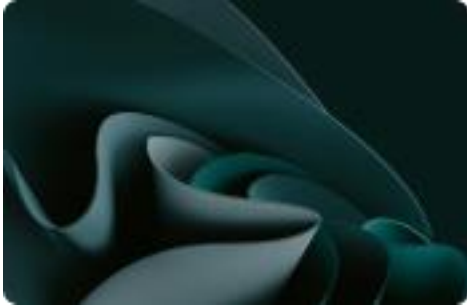


Life Cycle Analyses

POCAIS



Summary



01 | Methodology



02 | Results

01

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

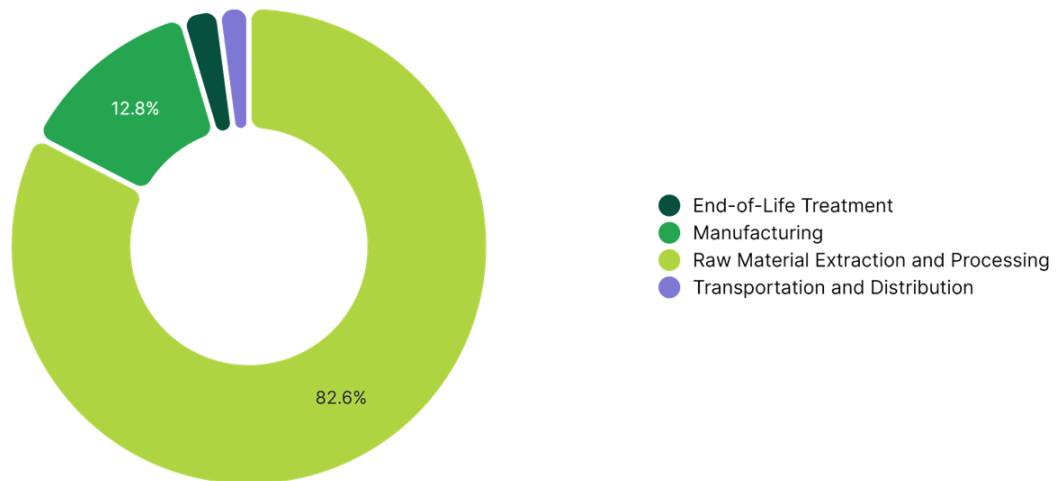
Nu m	Emission Factor	Source	Value	Unit
1	Polyurethane, rigid foam Ordinary transforming activity	ECOINVENT 3.10	4.60	kg
2	Polyvinylchloride, emulsion polymerised Ordinary transforming activity	ECOINVENT 3.10	2.63	kg
3	Nylon 6 Ordinary transforming activity	ECOINVENT 3.10	9.27	kg
4	Polyester filament finished at plant 100% polyester	BASE EMPREINTE ADEME 3.0	10.03	kg
5	Electricity Total (Scope 2 & 3) People's Republic of China	IEA 2023	0.72	kWh
6	Freight Boat From CN to FR	WELOW EXPERTS 1.0	0.25	kg
7	Waste yarn and waste textile Ordinary transforming activity	ECOINVENT 3.10	0.00	kg
8	Waste polyethylene/polypropylene product Ordinary transforming activity	ECOINVENT 3.10	1.78	kg
9	Waste polyvinylchloride product Ordinary transforming activity	ECOINVENT 3.10	1.21	kg

02

Results

Mailing bag

Climate Change

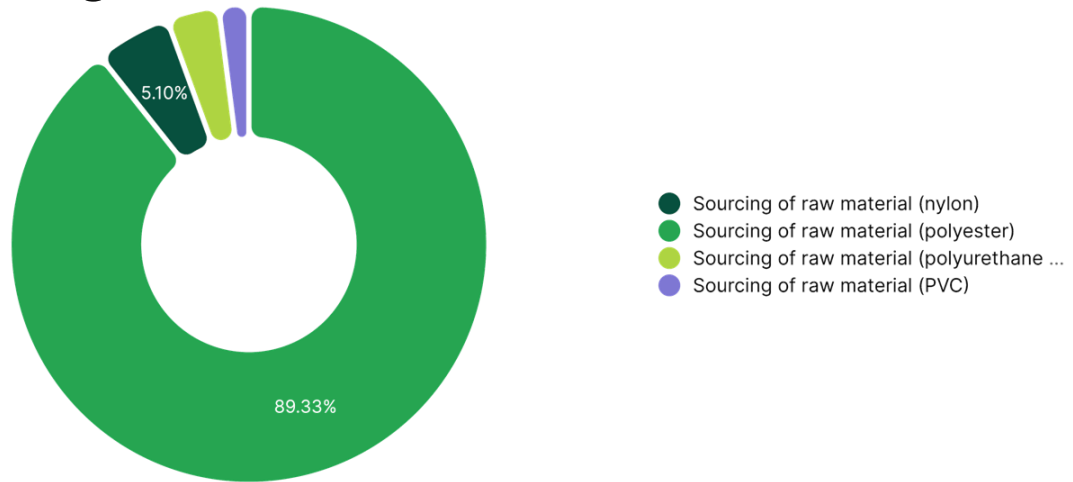


- End-of-Life Treatment
- Manufacturing
- Raw Material Extraction and Processing
- Transportation and Distribution

Step	Impact (g CO ₂ eq)	Percentage (%)
Raw Material Extraction and Processing	800.18	82.61 %
Manufacturing	124.01	12.80 %
End-of-Life Treatment	24.22	2.50 %
Transportation and Distribution	20.18	2.08 %
TOTAL	968.59	100.00 %

Mailing bag

Climate Change - Raw Material Extraction and Processing



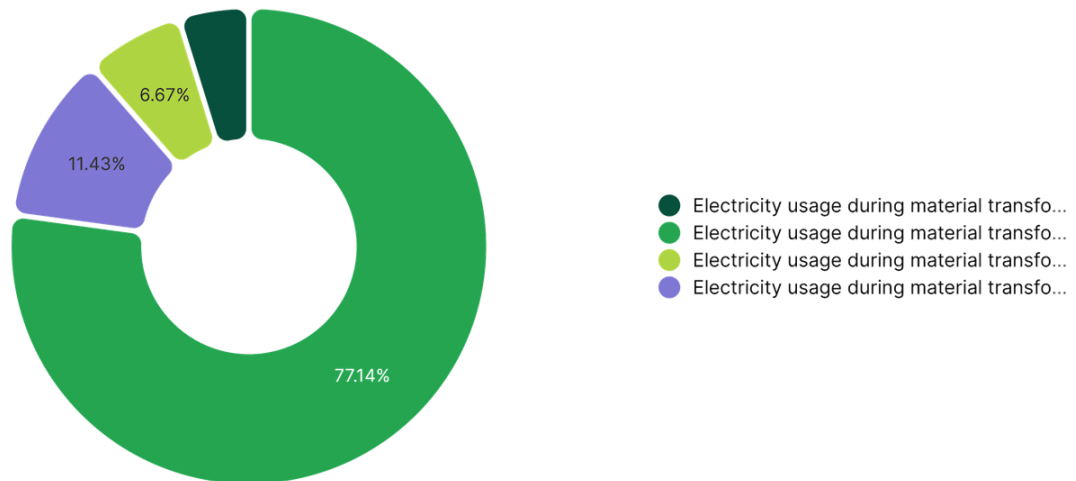
Activity	Emission Factor Num	Quantity	Unité	Impact (g CO ₂ eq)	Percentage (%)
Sourcing of raw material (polyester)	4	0.07	kg	714.83	89.33 %
Sourcing of raw material (nylon)	3	$4.4 \cdot 10^{-3}$	kg	40.81	5.10 %
Sourcing of raw material (polyurethane foam)	1	$6.16 \cdot 10^{-3}$	kg	28.35	3.54 %
Sourcing of raw material (PVC)	2	$6.16 \cdot 10^{-3}$	kg	16.19	2.02 %

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TOTAL				800.18	100.00 %
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Mailing bag

Climate Change - Manufacturing



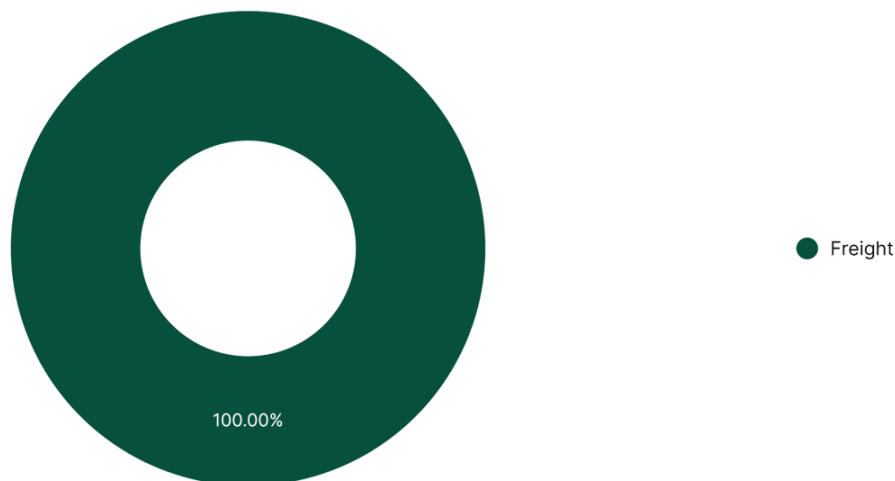
Activity	Emission Factor Num	Quantity	Unité	Impact (g CO ₂ eq)	Percentage (%)
Electricity usage during material transformation (polyester)	5	0.13	kWh	95.67	77.14 %
Electricity usage during material transformation (PVC)	5	0.02	kWh	14.17	11.43 %
Electricity usage during material transformation (polyurethane foam)	5	0.01	kWh	8.27	6.67 %
Electricity usage during material transformation (nylon)	5	$8.16 \cdot 10^{-3}$	kWh	5.91	4.76 %

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TOTAL				124.01	100.00 %
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Mailing bag

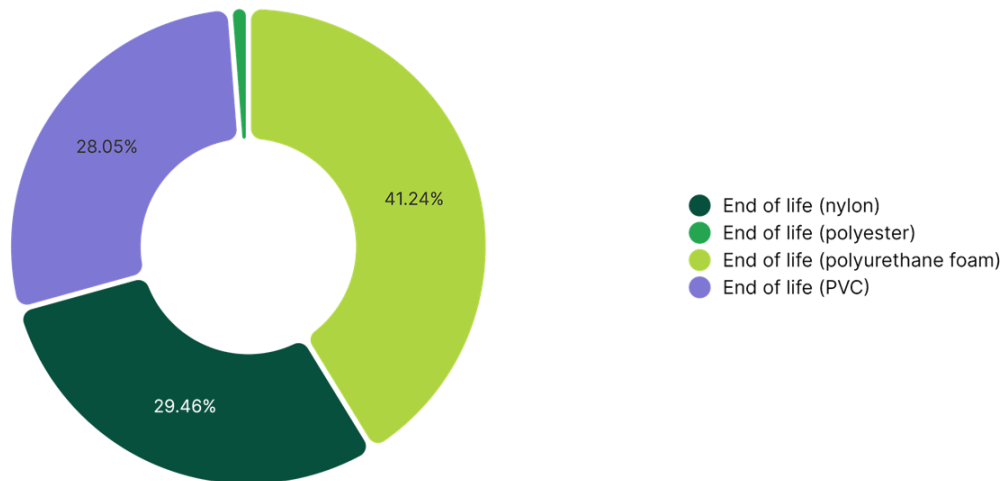
Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Unité	Impact (g CO ₂ eq)	Percentage (%)
Freight	6	0.08	kg	20.18	100.00 %
TOTAL				20.18	100.00 %

Mailing bag

Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Unité	Impact (g CO ₂ eq)	Percentage (%)
End of life (polyurethane foam)	8	$5.6 \cdot 10^{-3}$	kg	9.99	41.24 %
End of life (nylon)	8	$4 \cdot 10^{-3}$	kg	7.13	29.46 %
End of life (PVC)	9	$5.6 \cdot 10^{-3}$	kg	6.79	28.05 %
End of life (polyester)	7	0.06	kg	0.3	1.25 %

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TOTAL				24.22	100.00 %
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