

greenly

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Lyreco LCA

Life Cycle Assessment

The methodology in this report is based on ISO 14040

14138831 (sold in FR)

Summary



01 | Methodology



02 | Results

01

Methodology

Environmental Impact Assessment

Functional unit	<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).</p> <p>The functional unit of this analysis is "5 set(s) of bound pages of paper for the purpose of writing".</p>
Impact Indicator	<p>The impact is measured through the "IPCC 2013 GWP 100a" method.</p>
Electricity impact calculation method	<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>
Hypothesis	<p>The Product's material composition is supplemented by secondary information, if necessary, as shown in the list below.</p> <ul style="list-style-type: none"> - paper: paper 99% - binding: adhesive 1% <p>Manufacturing Processes and associated loss percentages are assumed based on materials in the product.</p> <p>The electricity is based on the average in the country of manufacturing.</p> <p>Transportation is based on the common routes between the country of manufacturing and the country of sale.</p> <p>No replacements during the lifetime, therefore there are no emissions corresponding to the usage phase.</p> <p>The End of Life is based on the average waste management process of the materials in the product.</p>

Environmental Impact Assessment

System Boundaries

The scope of this research includes the complete lifecycle of a notebook from raw material extraction to disposal options for each material, which is the cradle-to-grave perspective.

Exclusions

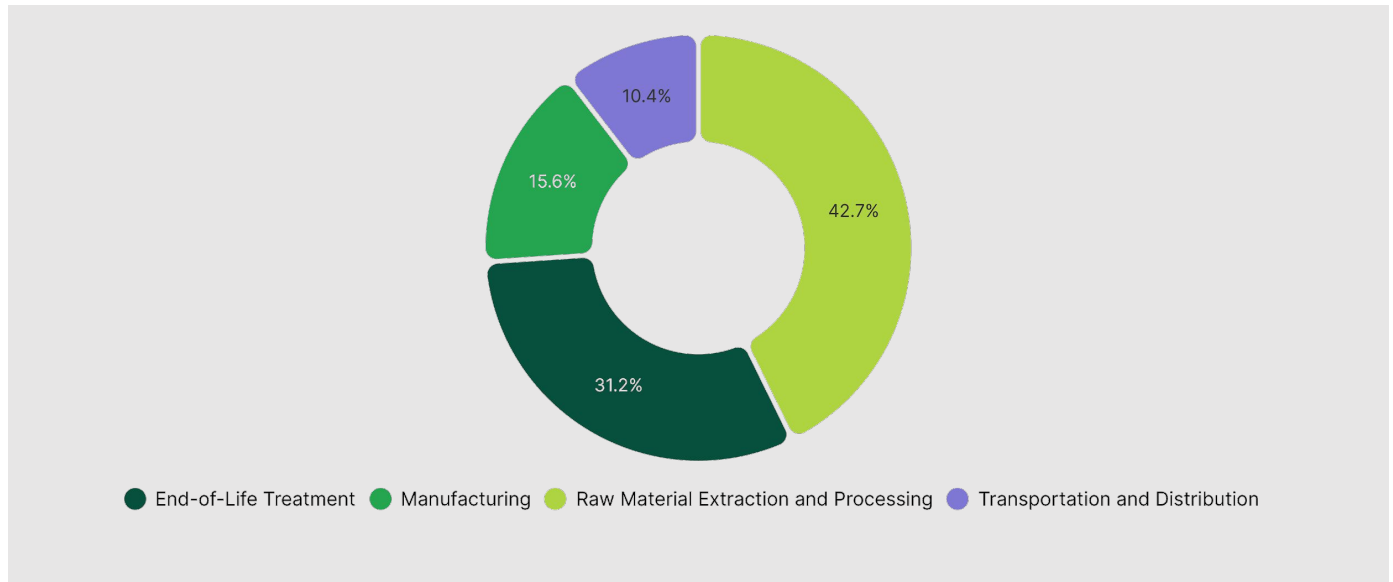
The impact of secondary packaging and writing utensils are excluded from this assessment.

02

Results

14138831 (sold in FR)

Climate Change



Step	Impact (g CO ₂ eq)	Percentage (%)
Raw Material Extraction and Processing	176.88	42.71 %
End-of-Life Treatment	129.31	31.23 %
Manufacturing	64.68	15.62 %
Transportation and Distribution	43.23	10.44 %
TOTAL	414.1	100.00 %

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Climate Change - Raw Material Extraction and Processing



● Sourcing of raw material (adhesive) ● Sourcing of raw material (bleached kraft paper)

Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
Sourcing of raw material (bleached kraft paper)	2	0.33	163.61	92.50 %
Sourcing of raw material (adhesive)	1	2.43 · 10 ⁻³	13.27	7.50 %
TOTAL			176.88	100.00 %

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Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
Electricity usage during material transformation (bleached kraft paper)	4	0.12	51.38	79.44 %
Natural gas usage during material transformation (bleached kraft paper)	3	0.06	11.3	17.48 %
Electricity usage during material transformation (adhesive)	4	4.51 · 10 ⁻³	2	3.09 %
TOTAL			64.68	100.00 %

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Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO ₂ eq)	Percentage (%)
End of life (bleached kraft paper)	7	0.22	126.31	97.68 %
End of life (adhesive)	6	2.21 · 10 ⁻³	2.99	2.32 %
TOTAL			129.31	100.00 %

Contact us

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