

**greenly**

2025-09-17

Lyreco LCA

# Life Cycle Assessment

*The methodology in this report is based on ISO 14040*

3922437 (sold in PL)

# Summary



**01** | Methodology



**02** | Results

# 01

## Methodology

# Environmental Impact Assessment

<p><b>Functional unit</b></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). The functional unit of this analysis is "2 set(s) of bound pages of paper for the purpose of writing".</p>
<p><b>Impact Indicator</b></p>	<p>The impact is measured through the "IPCC 2013 GWP 100a" method.</p>
<p><b>Electricity impact calculation method</b></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><b>Hypothesis</b></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

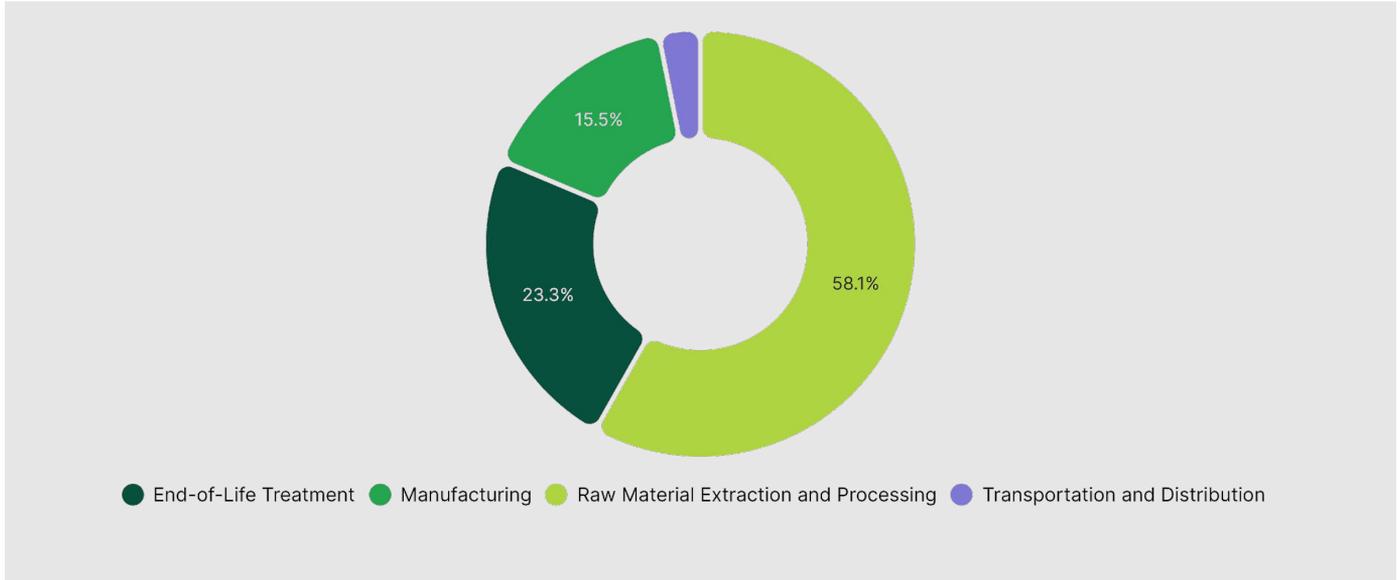
The impact of secondary packaging and writing utensils are excluded from this assessment.

# 02

## Results

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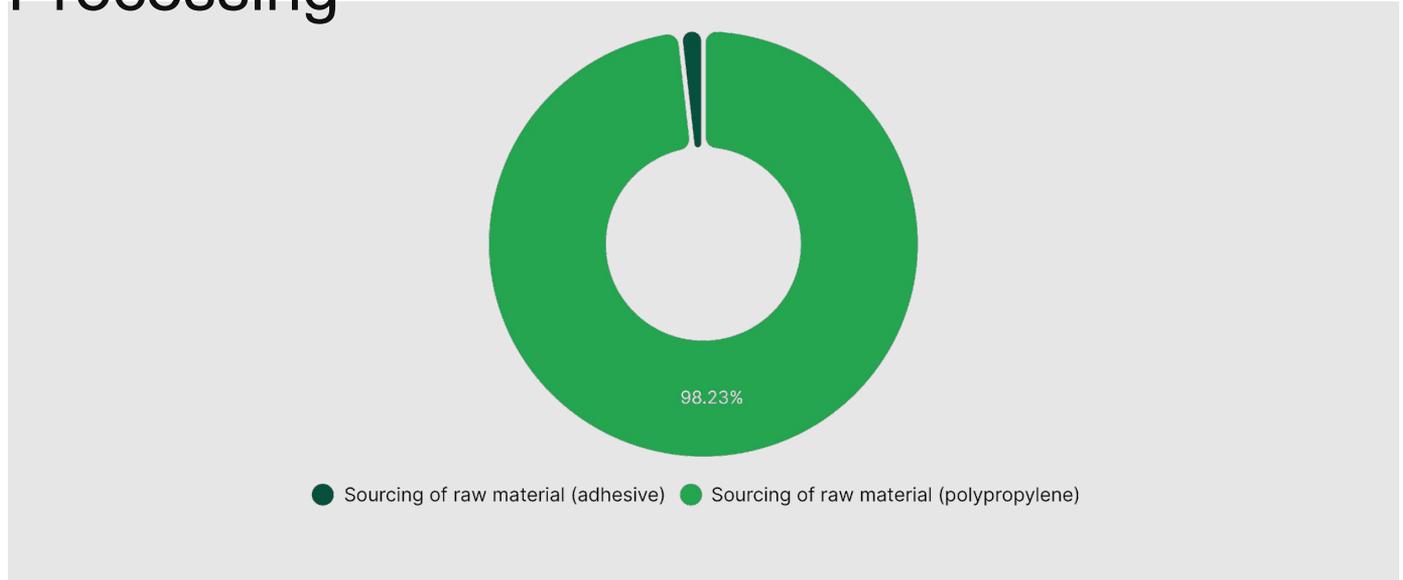
# Climate Change



Step	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Raw Material Extraction and Processing	61.42	58.12 %
End-of-Life Treatment	24.58	23.26 %
Manufacturing	16.39	15.51 %
Transportation and Distribution	3.28	3.11 %
<b>TOTAL</b>	<b>105.67</b>	<b>100.00 %</b>

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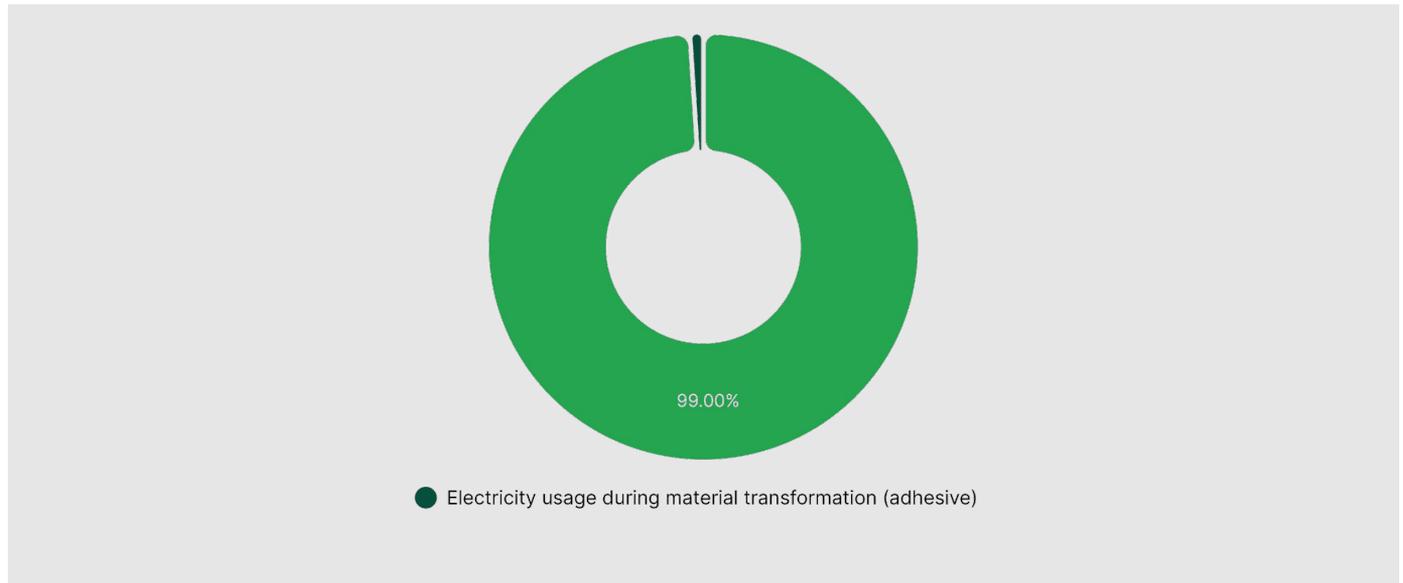
# Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (polypropylene)	1	0.02	60.33	98.23 %
Sourcing of raw material (adhesive)	2	1.99 · 10 <sup>-4</sup>	1.09	1.77 %
TOTAL			61.42	100.00 %

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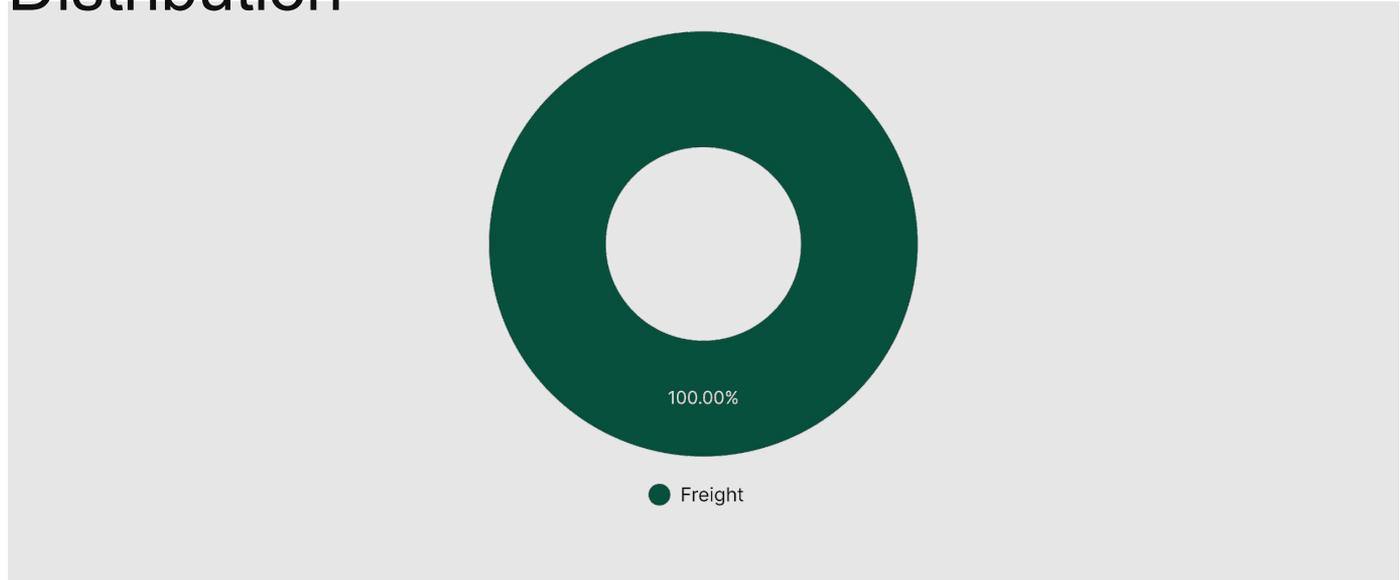
# Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Electricity usage during material transformation (polypropylene)	3	0.04	16.23	99.00 %
Electricity usage during material transformation (adhesive)	3	3.7 · 10 <sup>-4</sup>	0.16	1.00 %
TOTAL			16.39	100.00 %

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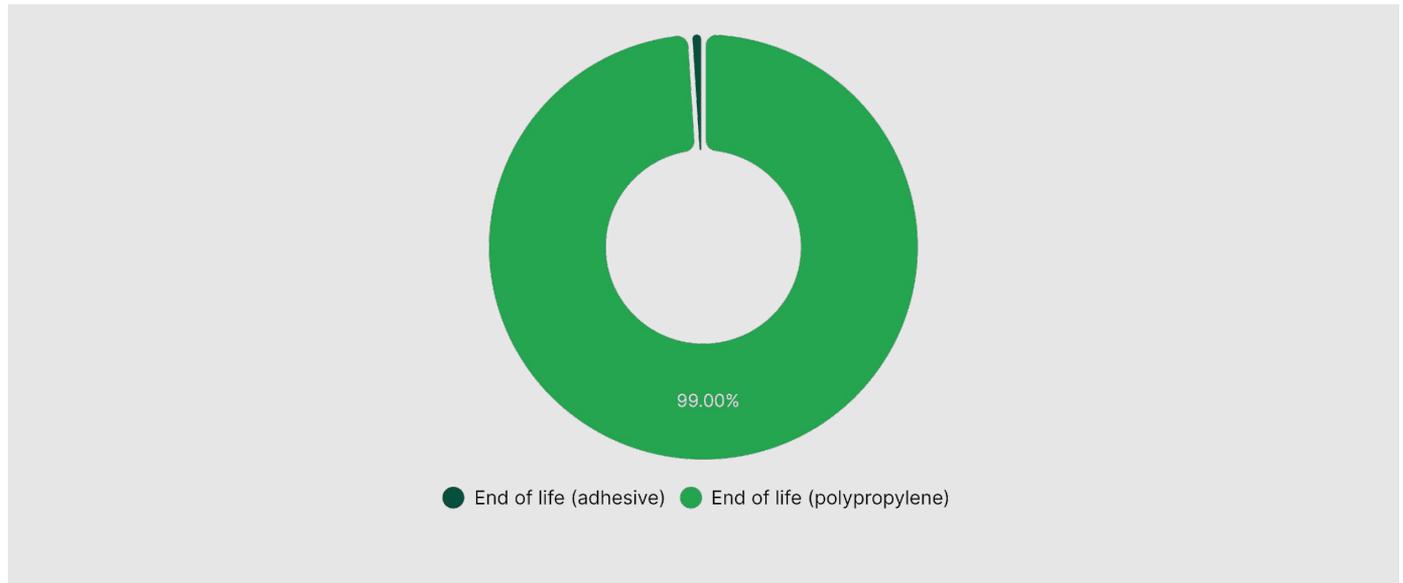
# Climate Change - Transportation and Distribution



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Freight	4	0.02	3.28	100.00 %
TOTAL			3.28	100.00 %

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# Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO <sub>2</sub> eq)	Percentage (%)
End of life (polypropylene)	5	0.02	24.33	99.00 %
End of life (adhesive)	5	1.81 · 10 <sup>-4</sup>	0.25	1.00 %
TOTAL			24.58	100.00 %

# Contact us

Alexis Normand CEO

[www.greenly.earth](http://www.greenly.earth)