

**greenly**

2025-09-17

Lyreco LCA

# Life Cycle Assessment

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

159337 (sold in CH)

# Summary



**01** | Methodology



**02** | Results

# 01

## Methodology

# Environmental Impact Assessment

<b>Functional unit</b>	<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 "500 page(s) of A4 paper for writing".</p>
<b>Impact Indicator</b>	<p>The impact is measured through the "IPCC 2013 GWP 100a" method.</p>
<b>Electricity impact calculation method</b>	<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>
<b>Hypothesis</b>	

# Environmental Impact Assessment

## System Boundaries

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

## Exclusions

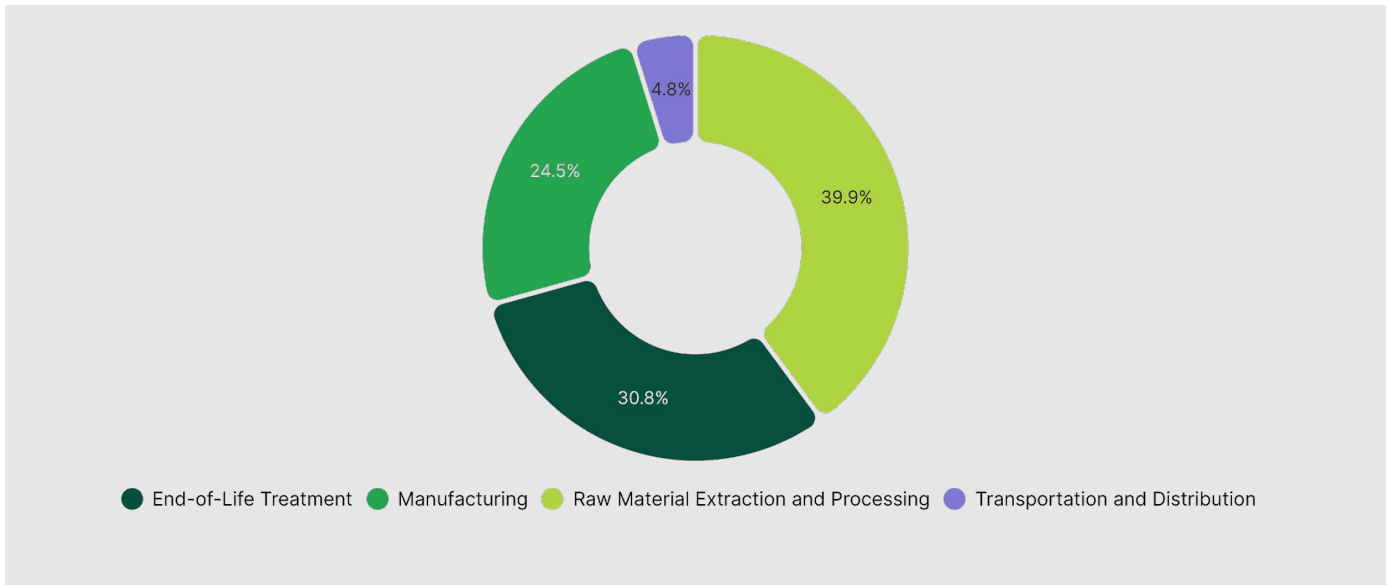
The impact of secondary packaging impact and writing utensils are excluded from this assessment.

# 02

## Results

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# Climate Change



Step	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Raw Material Extraction and Processing	3.98	39.89 %
End-of-Life Treatment	3.07	30.79 %
Manufacturing	2.45	24.49 %
Transportation and Distribution	0.48	4.82 %
<b>TOTAL</b>	<b>9.98</b>	<b>100.00 %</b>

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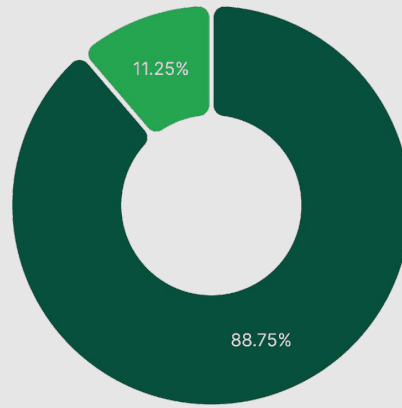
# Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (bleached kraft paper)	1	8	3.98	100.00 %
TOTAL			3.98	100.00 %

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# Climate Change - Manufacturing



- Electricity usage during material transformation (bleached kraft paper)
- Natural gas usage during material transformation (bleached kraft paper)

Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Electricity usage during material transformation (bleached kraft paper)	2	2.83	2.17	88.75 %
Natural gas usage during material transformation (bleached kraft paper)	3	1.52	0.28	11.25 %

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TOTAL			2.45	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	5.33	481.59	100.00 %
TOTAL			481.59	100.00 %

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# Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
End of life (bleached kraft paper)	5	5.33	3.07	100.00 %
TOTAL			3.07	100.00 %

# Contact us

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