

**greenly**

2025-09-17

Lyreco LCA

# Life Cycle Assessment

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

1197825 (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).<br/>The functional unit of this analysis is "1 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

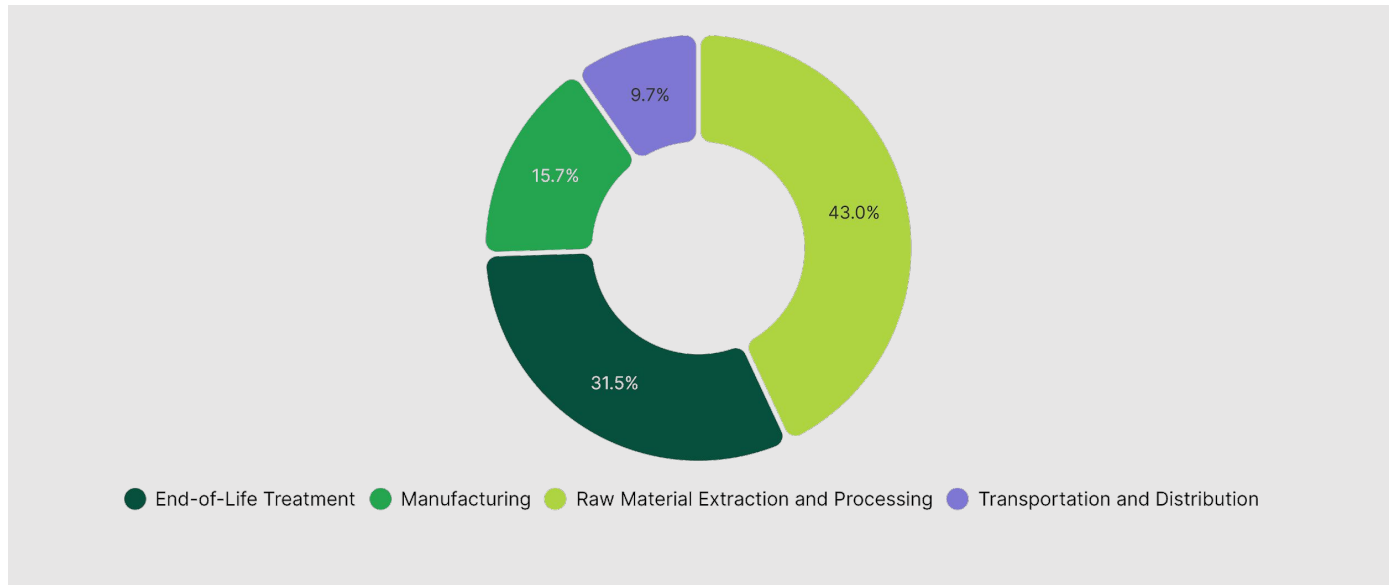
The impact of secondary packaging and writing utensils are excluded from this assessment.

# 02

## Results

1197825 (sold in PL)

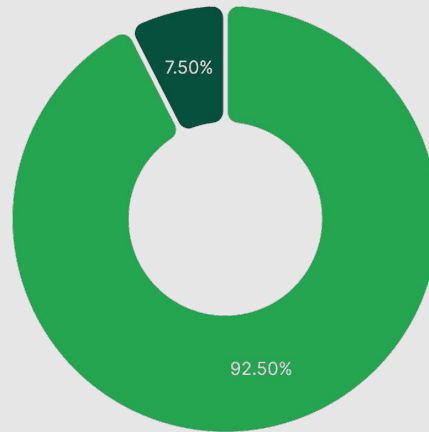
# Climate Change



| Step                                   | Impact (g CO <sub>2</sub> eq) | Percentage (%)  |
|--|-------------------------------|-----------------|
| Raw Material Extraction and Processing | 322.86                        | 43.05 %         |
| End-of-Life Treatment                  | 236.02                        | 31.47 %         |
| Manufacturing                          | 118.06                        | 15.74 %         |
| Transportation and Distribution        | 73.05                         | 9.74 %          |
| <b>TOTAL</b>                           | <b>749.98</b>                 | <b>100.00 %</b> |

1197825 (sold in PL)

# 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 <sub>2</sub> eq) | Percentage (%) |
|---|---------------------|-------------------------|-------------------------------|----------------|
| Sourcing of raw material (bleached kraft paper) | 1                   | 0.6                     | 298.64                        | 92.50 %        |
| Sourcing of raw material (adhesive)             | 2                   | 4.44 · 10 <sup>-3</sup> | 24.22                         | 7.50 %         |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

|       |  |  |        |          |
|-------|--|--|--------|----------|
| TOTAL |  |  | 322.86 | 100.00 % |
|-------|--|--|--------|----------|

1197825 (sold in PL)

# Climate Change - Manufacturing



| Activity  | Emission Factor Num | Quantity                | Impact (g CO <sub>2</sub> eq) | Percentage (%) |
|---|---------------------|-------------------------|-------------------------------|----------------|
| Electricity usage during material transformation (bleached kraft paper) | 3                   | 0.21                    | 93.78                         | 79.44 %        |
| Natural gas usage during material transformation (bleached kraft paper) | 4                   | 0.11                    | 20.63                         | 17.48 %        |
| Electricity usage during material transformation (adhesive)             | 3                   | 8.24 · 10 <sup>-3</sup> | 3.64                          | 3.09 %         |
| TOTAL   |                     |                         | 118.06                        | 100.00 %       |



1197825 (sold in PL)

# Climate Change - End-of-Life Treatment



| Activity                           | Emission Factor Num | Quantity                | Impact (g CO <sub>2</sub> eq) | Percentage (%) |
|------------------------------------|---------------------|-------------------------|-------------------------------|----------------|
| End of life (bleached kraft paper) | 7                   | 0.4                     | 230.55                        | 97.68 %        |
| End of life (adhesive)             | 6                   | 4.04 · 10 <sup>-3</sup> | 5.47                          | 2.32 %         |
| TOTAL                              |                     |                         | 236.02                        | 100.00 %       |

# Contact us

Alexis Normand CEO

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