

**greenly**

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Lyreco LCA

# Life Cycle Assessment

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

3111286 (sold in WI)

# 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 "500 page(s) of A4 paper for 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 piece of paper from raw material extraction to disposal options for each material, which is the cradle-to-grave perspective.

## Exclusions

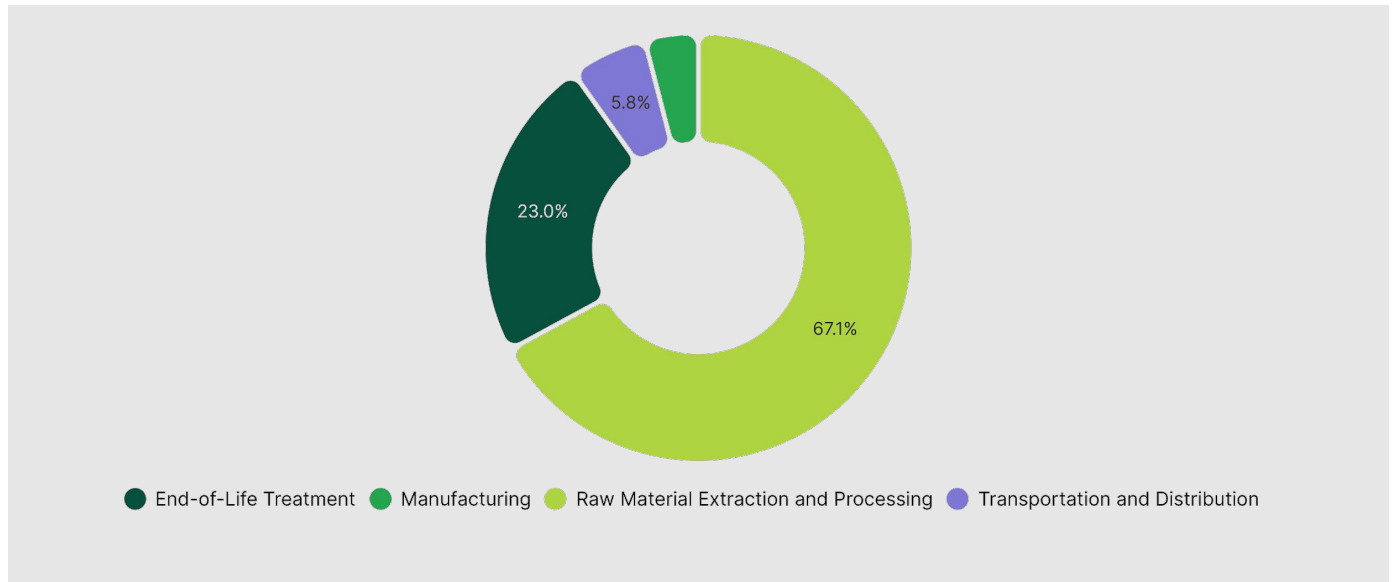
The impact of secondary packaging impact and writing utensils are excluded from this assessment.

# 02

## Results

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# Climate Change



| Step                                   | Impact (kg CO <sub>2</sub> eq) | Percentage (%) |
|--|--------------------------------|----------------|
| Raw Material Extraction and Processing | 4.2                            | 67.10 %        |
| End-of-Life Treatment                  | 1.44                           | 23.02 %        |
| Transportation and Distribution        | 0.37                           | 5.84 %         |
| Manufacturing                          | 0.25                           | 4.04 %         |
| TOTAL                                  | 6.27                           | 100.00 %       |

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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 (coloured kraft paper) | 1                   | 3.75     | 4.2                            | 100.00 %       |
|   |                     |          |                                |                |
|   |                     |          |                                |                |
|   |                     |          |                                |                |
|   |                     |          |                                |                |
| TOTAL   |                     |          | 4.2                            | 100.00 %       |

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# Climate Change - Manufacturing



| Activity  | Emission Factor Num | Quantity | Impact (g CO <sub>2</sub> eq) | Percentage (%) |
|---|---------------------|----------|-------------------------------|----------------|
| Natural gas usage during material transformation (coloured kraft paper) | 2                   | 0.71     | 129.09                        | 51.03 %        |
| Electricity usage during material transformation (coloured kraft paper) | 3                   | 1.33     | 123.89                        | 48.97 %        |
| TOTAL   |                     |          | 252.98                        | 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 (coloured kraft paper) | 5                   | 2.5      | 1.44                           | 100.00 %       |
|                                    |                     |          |                                |                |
|                                    |                     |          |                                |                |
|                                    |                     |          |                                |                |
|                                    |                     |          |                                |                |
| TOTAL                              |                     |          | 1.44                           | 100.00 %       |

# Contact us

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