greenly

2025-09-17

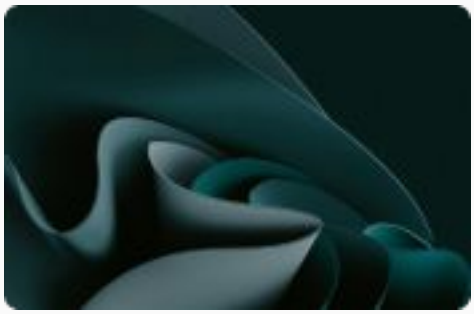
Lyreco LCA

Life Cycle Assessment

The methodology in this report is based on ISO 14040

1085509 (sold in PL)

Summary



01

Methodology

Environmental Impact Assessment

Functional unit	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 “5 set(s) of bound pages of paper for the purpose of writing”.
Impact Indicator	The impact is measured through the "IPCC 2013 GWP 100a" method.
Electricity impact calculation method	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.
Hypothesis	

Environmental Impact Assessment

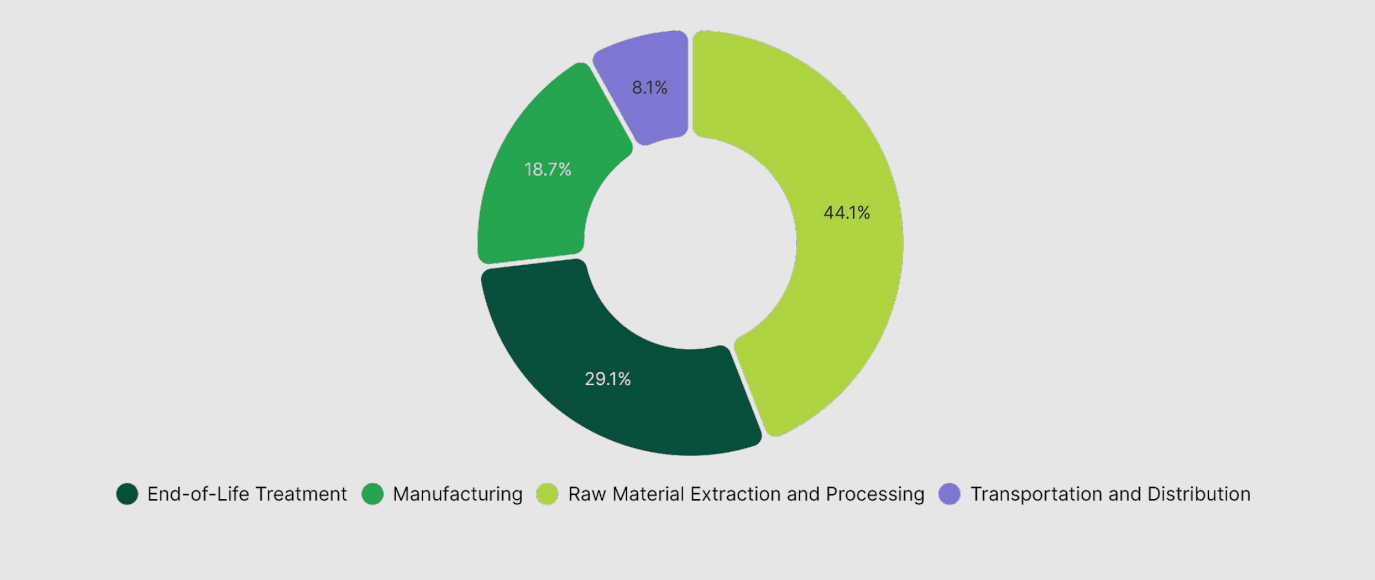
System Boundaries	The scope of this research includes the complete lifecycle of a notebook from raw material extraction to disposal options for each material, which is the cradle-to-grave perspective.
Exclusions	The impact of secondary packaging and writing utensils are excluded from this assessment.

02

Results

1085509 (sold in PL)

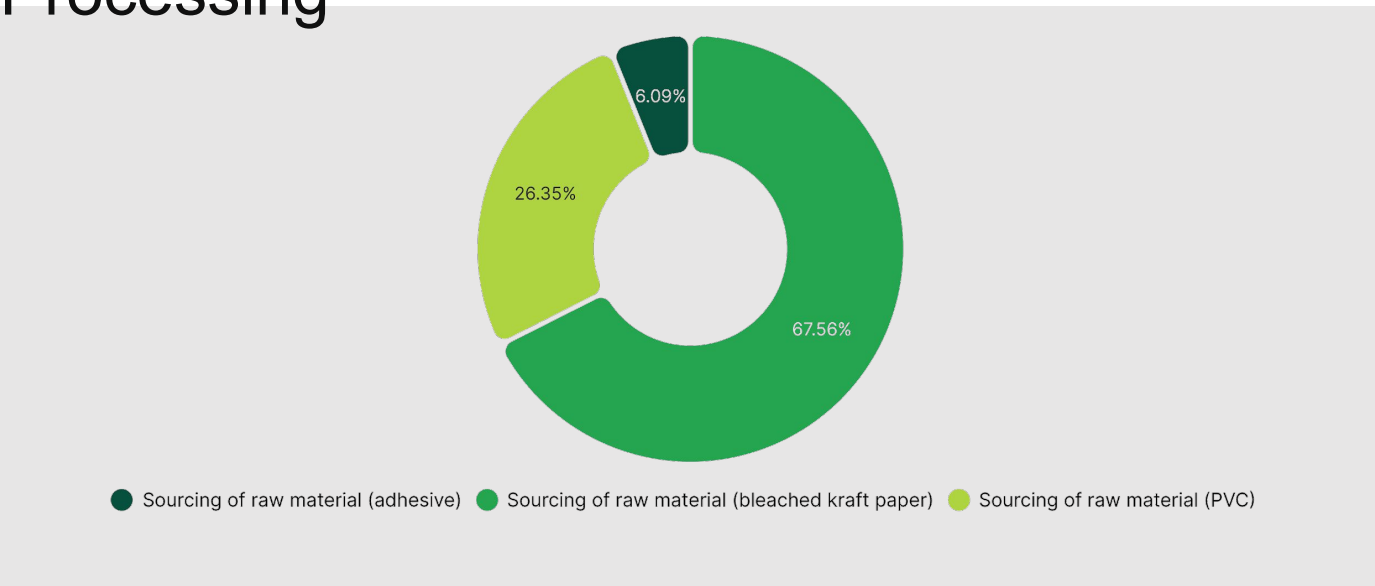
Climate Change



Step	Impact (g CO_2 eq)	Percentage (%)
Raw Material Extraction and Processing	40.33	44.09 %
End-of-Life Treatment	26.57	29.05 %
Manufacturing	17.15	18.75 %
Transportation and Distribution	7.41	8.11 %
TOTAL	91.46	100.00 %

1085509 (sold in PL)

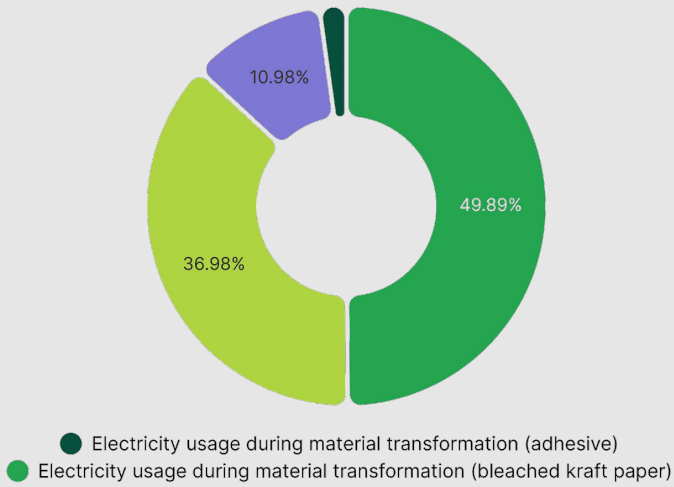
Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
Sourcing of raw material (bleached kraft paper)	1	0.05	27.25	67.56 %
Sourcing of raw material (PVC)	2	4.51 · 10^-3	10.63	26.35 %
Sourcing of raw material (adhesive)	3	4.51 · 10^-4	2.46	6.09 %
TOTAL			40.33	100.00 %

1085509 (sold in PL)

Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
Electricity usage during material transformation (bleached kraft paper)	4	0.02	8.56	49.89 %
Electricity usage during material transformation (PVC)	4	0.01	6.34	36.98 %
Natural gas usage during material transformation (bleached kraft paper)	5	0.01	1.88	10.98 %
Electricity usage during material transformation (adhesive)	4	8.37 · 10^-4	0.37	2.16 %
TOTAL			17.15	100.00 %

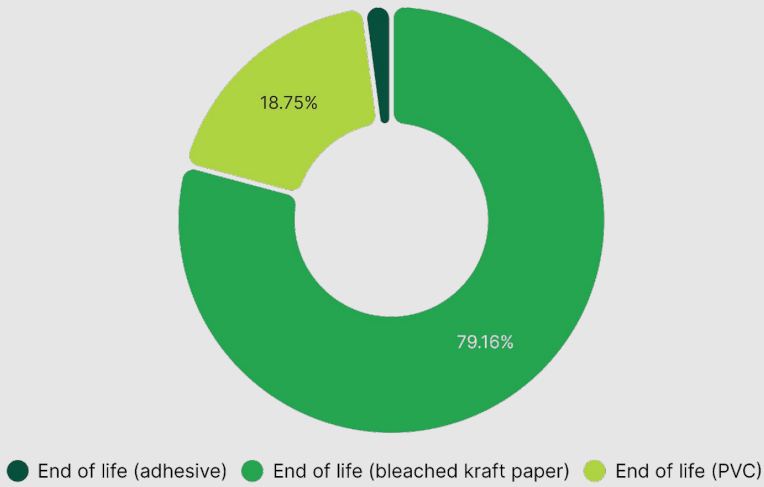
1085509 (sold in PL)

Climate Change - Transportation and Distribution

Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
Freight	6	0.04	7.41	100.00 %
TOTAL			7.41	100.00 %

1085509 (sold in PL)

Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
End of life (bleached kraft paper)	7	0.04	21.03	79.16 %
End of life (PVC)	8	4.1 · 10^-3	4.98	18.75 %
End of life (adhesive)	9	4.1 · 10^-4	0.55	2.09 %
TOTAL			26.57	100.00 %

Contact us

Alexis Normand CEO
www.greenly.earth

greenly