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2025-09-17

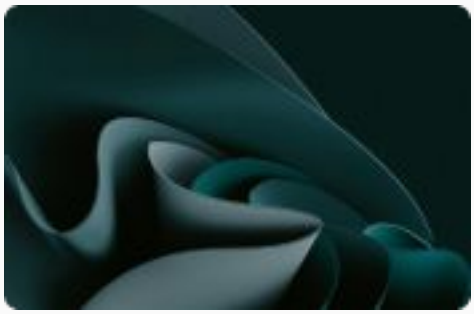
Lyreco LCA

Life Cycle Assessment

The methodology in this report is based on ISO 14040

20996186 (sold in SE)

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 “1 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

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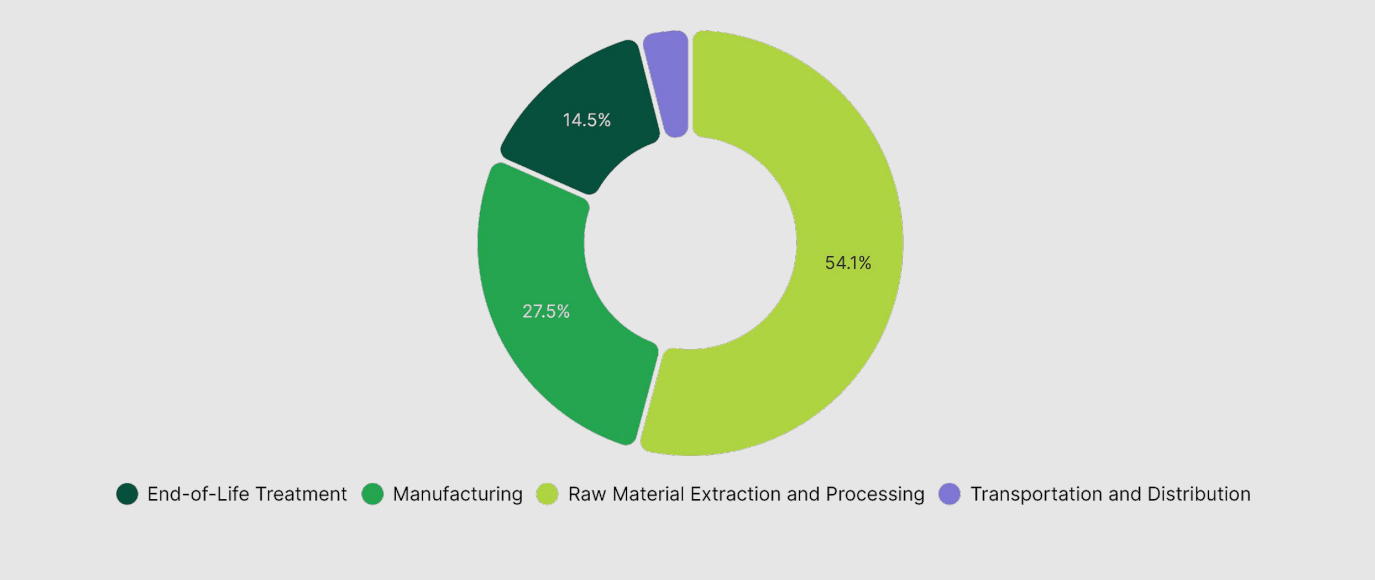
Climate Change



Step	Impact (kg CO_2 eq)	Percentage (%)
Raw Material Extraction and Processing	0.87	54.13 %
Manufacturing	0.44	27.48 %
End-of-Life Treatment	0.23	14.45 %
Transportation and Distribution	0.06	3.94 %
TOTAL	1.61	100.00 %

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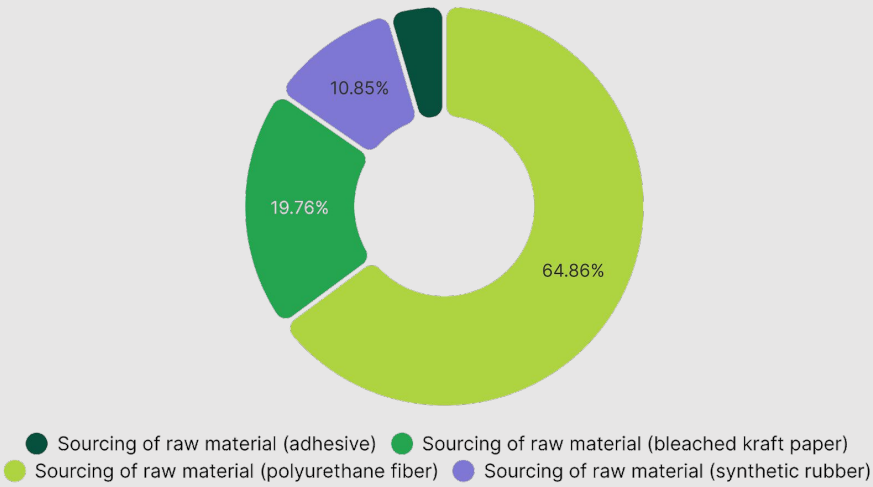
Climate Change - Raw Material Extraction and Processing



Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
Sourcing of raw material (polyurethane fiber)	1	0.09	566.28	64.86 %
Sourcing of raw material (bleached kraft paper)	2	0.35	172.48	19.76 %
Sourcing of raw material (synthetic rubber)	4	0.03	94.73	10.85 %
Sourcing of raw material (adhesive)	3	7.26 · 10^-3	39.56	4.53 %
TOTAL			873.05	100.00 %

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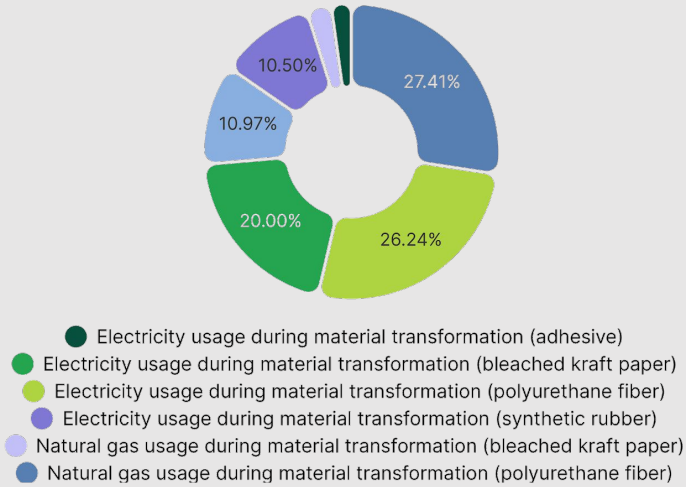
Climate Change - Manufacturing



Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
Natural gas usage during material transformation (polyurethane fiber)	6	0.67	121.48	27.41 %
Electricity usage during material transformation (polyurethane fiber)	5	0.16	116.28	26.24 %
Electricity usage during material transformation (bleached kraft paper)	5	0.12	88.63	20.00 %
Natural gas usage during material transformation (synthetic rubber)	6	0.27	48.59	10.97 %
Electricity usage during material transformation (synthetic rubber)	5	0.06	46.51	10.50 %
Natural gas usage during material transformation (bleached kraft paper)	6	0.07	11.92	2.69 %
Electricity usage during material transformation (adhesive)	5	0.01	9.74	2.20 %
TOTAL			443.16	100.00 %

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Climate Change - Transportation and Distribution

Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
Freight	7	0.33	63.48	100.00 %
TOTAL			63.48	100.00 %

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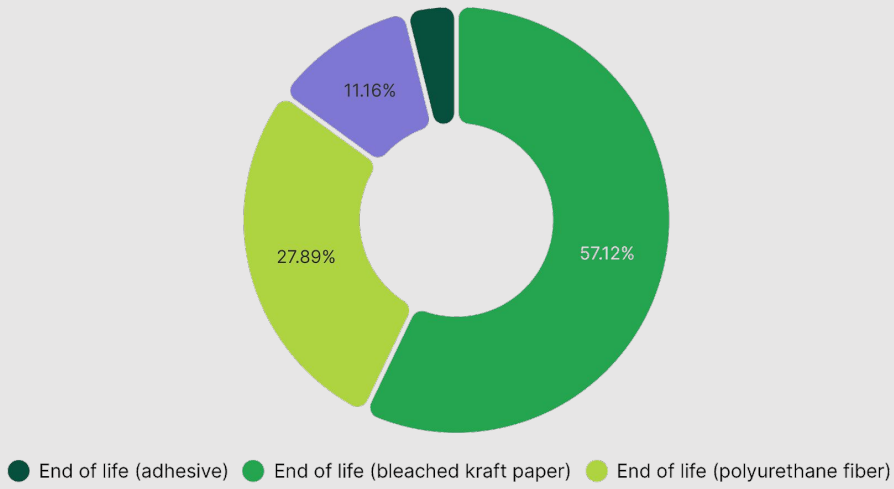
Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Impact (g CO_2 eq)	Percentage (%)
End of life (bleached kraft paper)	9	0.23	133.16	57.12 %
End of life (polyurethane fiber)	8	0.07	65.01	27.89 %
End of life (synthetic rubber)	8	0.03	26.01	11.16 %
End of life (adhesive)	10	6.6 · 10^-3	8.93	3.83 %
TOTAL			233.11	100.00 %

Contact us

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