LCA by Lyreco

LIFE CYCLE ASSESSMENT

ReCirkel Global AB

RESULT REPORT

August 2026

LCA by Lyreco is a tool for life cycle assessment built for Lyreco by Miljögiraff.
The result from LCA by Lyreco gives an indication of the carbon footprint of a product based on specific data on material composition and energy use in production.
Data from database ecoinvent 3.12 is used to model the impact of raw materials.

Product information

Declared unit: One roll of plastic bags

Products included in assessment: V2808, Papperskorgpåse 30L Vit HDPE 520x580 mm, 8022269

Product owner: ReCirkel Global AB

Additional information

Weight one plastic roll: 0,38 kg

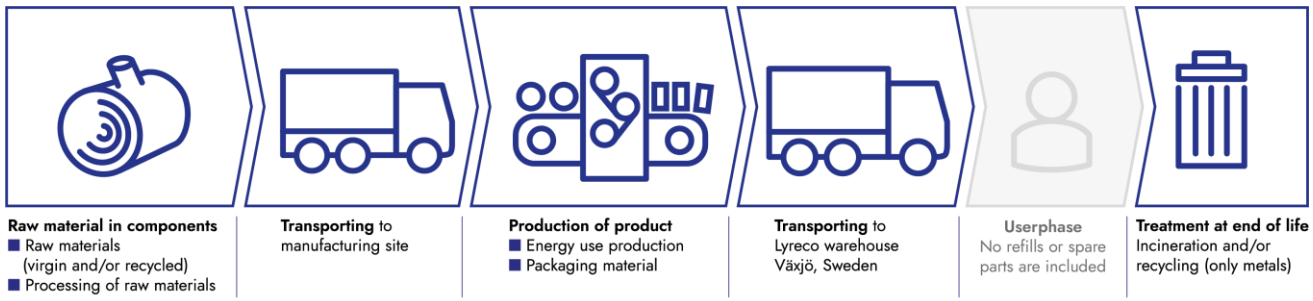
Plastic bags per roll: 100 bags

Volume per bag: 30 Liter

LCA scope and system boundaries

The Life Cycle Assessment is based on a cradle to grave perspective and includes the raw materials used in components, manufacturing of the product, transportation throughout the product's life cycle and waste treatment.

This LCA is based on the assumption that waste in production as well as the product with packaging are incinerated once they are disposed. This is applied for all materials except metals, which are assumed to go to material recycling.



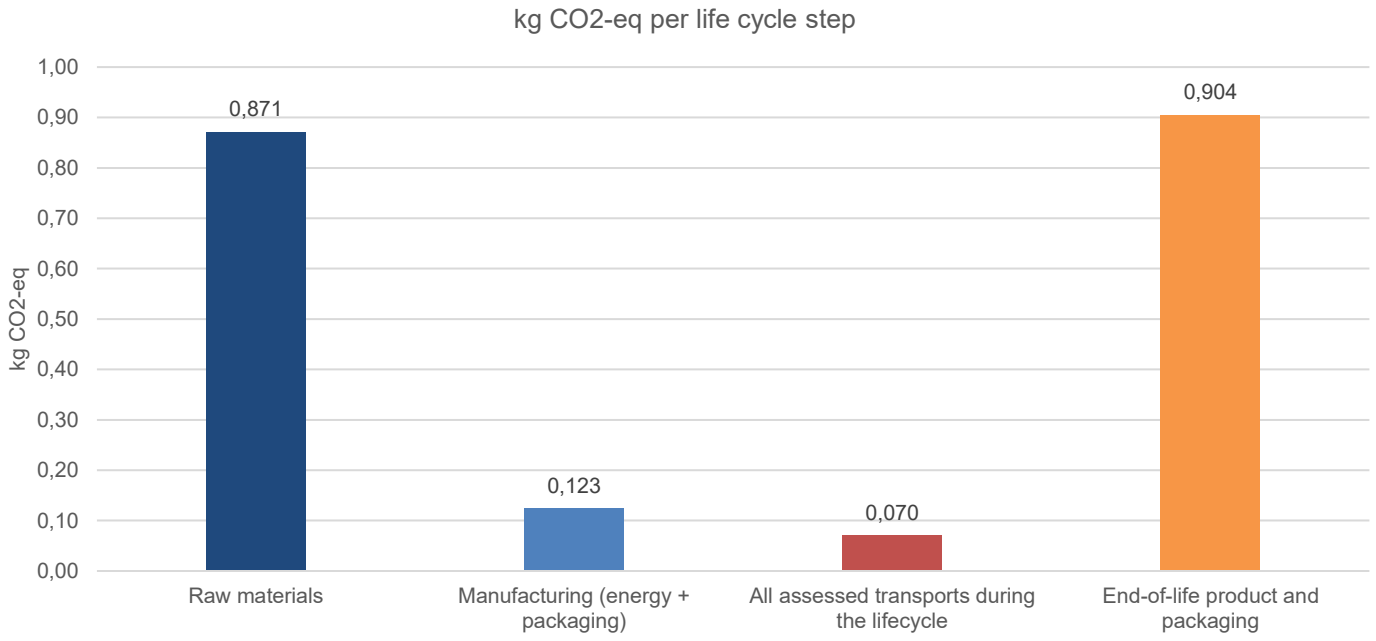
Result

The result is presented for one pen including packaging.

Total kg CO2-eq is 1,97.

The impact for one plastic bag is 0,0197 kg CO2-eq.

Impact category	Unit	Total lifecycle	Raw materials	Manufacturing	All transports	End-of-life
Climate change – Total	kg CO2-eq	**1,968**	**0,871**	**0,123**	**0,070**	**0,904**
Climate change – Fossil	kg CO2-eq	1,963	0,869	0,120	0,070	0,904
Climate change - Biogenic	kg CO2-eq	0,004	0,001	0,003	0,000	0,000
Climate change - Land use and LU change	kg CO2-eq	0,001	0,001	0,000	0,000	0,000



The end-of-life phase accounts for the highest CO2-eq emission. This result is primarily driven by the assumption that the plastic bag is incinerated in Sweden after use, once filled with waste. The raw material represents the second largest contribution to the CO2-eq emissions, consisting of 100% virgin high-density polyethylene (HDPE).

LCA information

Generator of data:
Sara Eliasson, sara.eliasson@recirkel.se

Inventory period:
2026

Date of assessment:
2026-08-05

Recorder of data:
Nieke Sarink, nieke.sarink@lyreco.com

Standard:
ISO 14067, consistent with ISO 14040-44
Type II environmental declaration, self declared with no third party review

Impact assessment method:
IPCC 2021 GWP100

Indicators:
Global Warming Potential (GWP-100)

Tool:
SimaPro

Background data:
ecoinvent 3.12

Allocation:

Cut-off approach
Economic allocation for post industrial raw materials

Archetype model in SimaPro:
Archetype 6 – Plastic bags
Version 1.0

Archetype model made by:
Miljögiraff

Method report:
Method report LCA by Lyreco
Version 1.5

Interpretation and limitations

The carbon footprint is based on specific data on material composition and energy use in production. Ecoinvent 3.12 is used to model the impact of raw materials. The level of uncertainty in the results is significantly influenced by the selection of data representing specific materials. The underlying calculation tool has been developed and verified by Miljögiraff AB. However, the specific result generated by the tool have not undergone a third-party review to assess its plausibility.

The result covers only one environmental impact, the carbon footprint. No overall statements on the environmental performance of the product can be given. Furthermore, the results are presented per declared unit and do not offer insights into how the product's environmental performance relates to its intended function.

Data quality assessment

Primary data has been collected for:

- Product composition: raw material
- Product manufacturing: energy, waste, packaging materials
- Transports during the lifecycle

Keep in mind that this assessment is based on data relevant for manufacturing in 2026, hence the data should be updated if any significant changes are made within the product system. It is recommended that the data is updated at least every five year to stay accurate and relevant.

LCI data composition:

Based on the assessment of climate impact results for the lifecycle steps where primary data has been collected, it has been evaluated that 100% of the impact can be derived to the following data quality levels: 16% level 1, 82% level 2 and 2% level 3. End-of-life is excluded from this assessment as any treatment in end-of-life is based on conservative assumptions how materials are treated currently.

Data quality for manufacturing are specific, hence they are considered as level 1. The data quality for raw materials has been determined based on the following criteria:

Level	Description
1	Suppliers' Environmental Product Declarations (ISO 14025) and verified LCA (ISO 14044).
2	Self declared (ISO 14021) LCA and LCA screening. Representative LCA models (selected generic data), or similar product's EPD.
3	Climate impact per type of industry. Close proxy by generic LCI data. Averages from several EPDs from the same industry.

Aspect	Notes
Data quality assessment scheme	See above
Geographical coverage	Raw material data: Level 2. Manufacturing data: Level 1.
Technological representativeness	Raw material data: Level 2. Manufacturing data: Level 1.
Time-related coverage	Data of external processes: Not older than 10 years. Manufacturing data: 2026
Validity	Assess whether the technological and geographical coverage of the data chosen reflects the physical reality of the product system modelled.
Plausibility	Result of plausibility checks, for example: Specific data used has been checked for plausibility, using as reference for example EPDs for similar products when possible.
Precision	Material and energy flow quantified based on generic data from the following LCI databases: e.g. ecoinvent 3.12 Cut-off
Completeness and treatment of missing data	Simplifications done in the model: All waste is recycled and reused internally in the production of new bags. Waste consisting of hydraulic oils, other engine, gear and lubricating oils, absorbents, filter materials, wiping cloths, and protective clothing contaminated with hazardous substances is excluded, as it accounts for less than 0.01% of total annual waste. A maximum of 5% cut-off was applied.