

Life Cycle Assessment of Rum Blanc

Produced by undefined

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Main findings

Key Environmental Impact Results

In this study, an environmental life cycle assessment (LCA) of Rum Blanc produced by undefined was conducted. The assessment focused on climate impacts represented by the 'Global Warming Potential in the next 100 years (GWP100)'.
Carbon Footprint: 200,250 kg CO₂e per unit
Water Footprint: 3375000.0 L per unit

The study shows a carbon footprint of 200.250 kg CO₂-eq per product unit. The packaging materials have the highest contribution to the climate impacts, followed by ingredient production and processing. The water footprint analysis shows 3375000 litres of water consumption per product unit.
Annual Production: 150,000 units
Total Annual Impact: 200.3 tonnes CO₂e

All calculations follow ISO 14040 and ISO 14044 LCA standards, using the latest environmental impact databases including ecoinvent 3.5 and verified supplier data where available.

1. Introduction

1.1. Background

undefined is committed to sustainable production practices. This Life Cycle Assessment (LCA) was conducted to quantify the environmental impacts of Rum Blanc using the most widely accepted methodology for calculation of environmental impacts, standardized in ISO 14040 and ISO 14044.

According to these standards, there are four phases in an LCA study:

- a) Goal and scope definition
- b) Inventory analysis
- c) Impact assessment
- d) Life cycle interpretation.

1.2. Goal and scope definition

The goal of this study is to assess the environmental impacts of Rum Blanc. Results will be used for internal sustainability reporting and stakeholder communication. The scope of the assessment is 'cradle-to-gate', including raw materials extraction and production processes.

The functional unit is defined as: 1 750mL bottle of Rum Blanc.

The assessment focuses on climate change impact represented by the Global Warming Potential in the next 100 years (GWP100) as defined by the IPCC, supplemented by water consumption analysis.

2. Inventory analysis

2.1. Process description

The production process of Rum Blanc includes ingredient sourcing, processing, packaging, and distribution. Raw materials are sourced from verified suppliers and processed according to industry standards.

2.2. Process data

Ingredient composition:

- Molasses, cane: 1.5 kg

Packaging specifications:

- Bottle: 530g (Glass bottle, clear)
- Label: 2.5g (Paper label, uncoated)

2.3. Dataset references

All impact calculations are based on the following environmental databases and sources:

- Ecoinvent 3.5 database for background processes
- DEFRA 2024 emission factors for UK-specific processes
- Verified supplier environmental product declarations where available
- OpenLCA methodology for ingredient impact calculations

2.4. Allocation

Where processes produce multiple outputs, environmental impacts are allocated based on economic value or mass, following ISO 14044 guidelines. Facility-level impacts are allocated proportionally based on production volumes.

3. Impact assessment / Interpretation

Results of the life cycle impact assessment are shown below:

Impact breakdown by category:

Carbon Footprint: 200.25 tonnes CO₂e

Water Footprint: 3375000 litres

Waste Generated: 0 tonnes

The assessment shows that the primary environmental impacts come from raw material production and packaging. Energy consumption during processing contributes a smaller but significant portion of the total impact.

Calculation date: 9/8/2025

System: Avallen Sustainability Platform

4. References

- [1] ISO 14040:2006 - Environmental management — Life cycle assessment — Principles and framework
- [2] ISO 14044:2006 - Environmental management — Life cycle assessment — Requirements and guidelines
- [3] Ecoinvent 3.5 database - Swiss Centre for Life Cycle Inventories
- [4] DEFRA 2024 - UK Government GHG Conversion Factors for Company Reporting
- [5] IPCC 2013 - Climate Change 2013: The Physical Science Basis