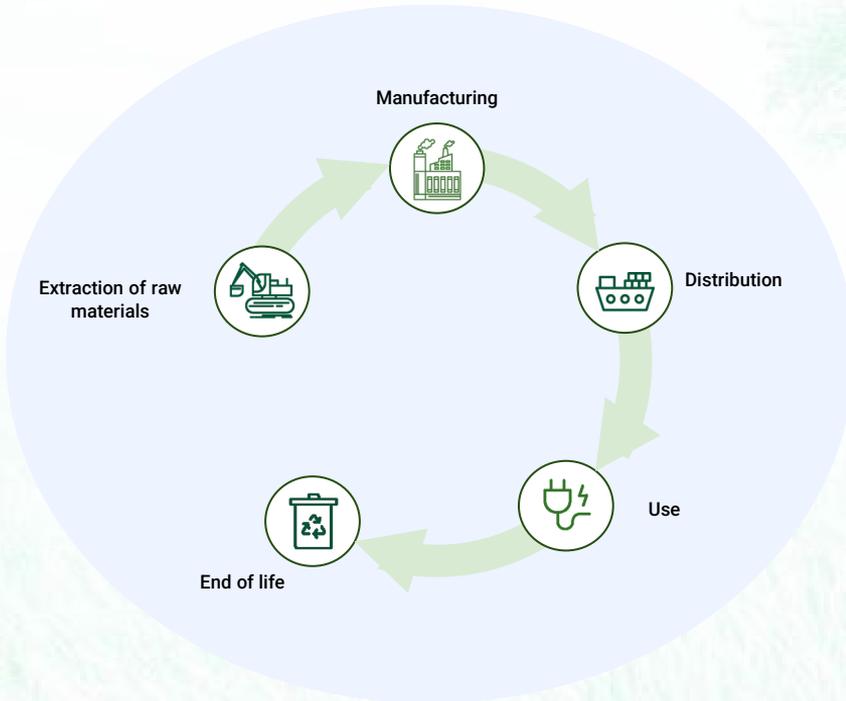


Greenly X aquama Life Cycle Assessment



Life Cycle Assessment

Take a closer look at the impact of your products



A Life-Cycle Assessment (LCA) is generally divided into 5 main stages - from the extraction of raw materials to their end of life.

It allows to track down the carbon footprint of a product **across its whole chain of value**.

Life-Cycle Assessment Methodology

Sector-specific methodological guides



State-of-the-art LCA databases



Agence de l’Environnement
et de la Maîtrise de l’Énergie



European Commission

PEF

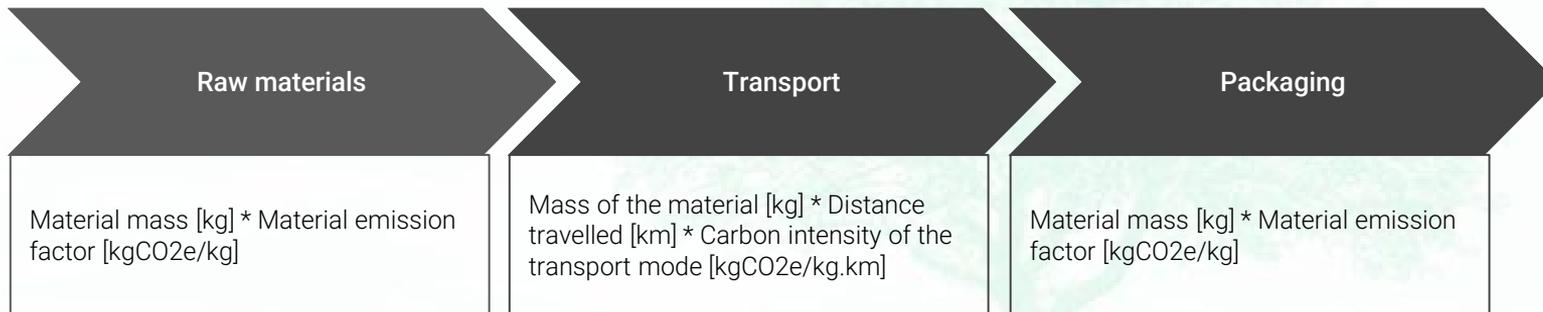
Life-Cycle Assessment

Methodology

Functional unit	<p>The functional unit adopted in this study is: "1 year of use of a disinfection and cleaning solution".</p> <p>Since the aquama solution is characterized by a reuse of the container (estimated life span: 10 years), the following items are allocated in proportion to the duration of the study scenario:</p> <ul style="list-style-type: none">• Production and end of life of the bottle• Production and end of life of packaging• Transport of the bottle and its packaging
Reference flow	<p>The reference flow is calculated based on an assumption of 10 650 mL bottles per year.</p>
Impact Indicator	<p>The contribution of the product to climate change is measured through the "IPCC 2013 GWP 100a" method</p>
End of life	<p>The components of the product can be recycled overall without significant loss of quality (water, HDPE). Following the recommendations of PAS 2050:2011, the calculation method adopted to account for end-of-life emissions is the <i>end-of-life approach</i>.</p>

Life cycle analysis

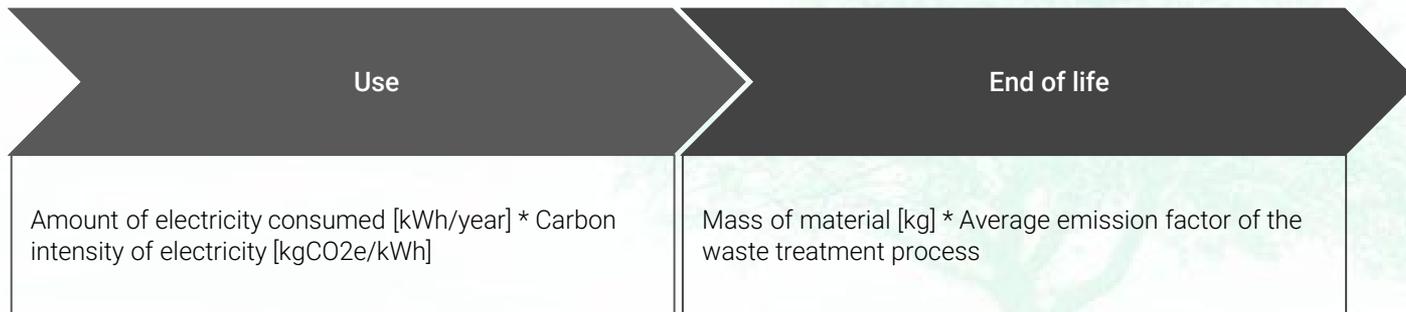
Raw materials & Transportation



	Raw materials	Transport	Packaging
Company data	<ul style="list-style-type: none">• Mass of each raw material used (water, salt, HDPE bottle)	<ul style="list-style-type: none">• Place of manufacture and use of the bottle• Means of transport	<ul style="list-style-type: none">• Mass of each raw material used (cardboard, paper)
Greenly data	<ul style="list-style-type: none">• Emission factors (in kgCO2e/kg) for the extraction and transformation of each material from specialized databases (Base Carbone ADEME, ecoinvent)	<ul style="list-style-type: none">• Emission factors of the different means of transport (in kgCO2e/kg.km)	<ul style="list-style-type: none">• Emission factors (in kgCO2e/kg) for the extraction, transformation and end of life of each material from specialized databases (Base Carbone ADEME)

Life cycle analysis

Use & End of life

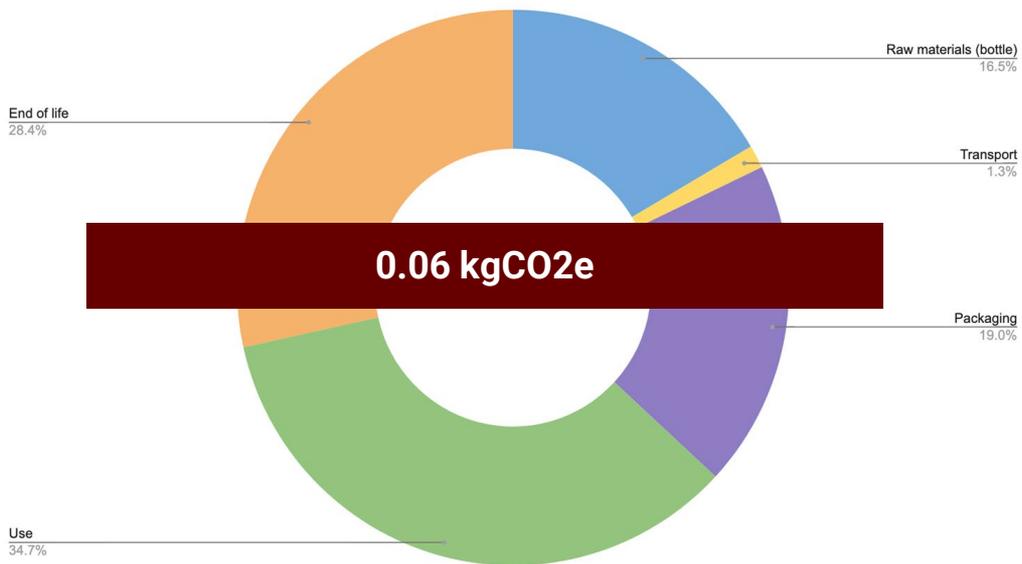


Company data	<ul style="list-style-type: none">Country of useElectricity consumption per bottleAnnual frequency of use	<ul style="list-style-type: none">Average lifetime of the product
	<ul style="list-style-type: none">Emission factor on the carbon intensity of the electricity consumed	<ul style="list-style-type: none">Average emission factors by treatment method and type of material from the ADEME carbon baseDefault values on the distribution between the different treatment channels

Life cycle analysis

Results

Breakdown of the GHG emissions related to the aquama® cleaning solution over 1 year of use



0.06 kgCO₂e is the equivalent of :



300 m by car



the production of 40 g of pasta



4 days of operation of a LED bulb in France

Average carbon footprint of a French person: **9.9 tCO₂e/year**

Life cycle analysis

Comparison



Products 1 to 3 correspond to disposable disinfectant solutions, for which LCAs have been published.

Sources: Environmental Product Declarations, Golsteijn, Laura, et al. "A compilation of life cycle studies for six household detergent product categories in Europe: the basis for product-specific AISE Charter Advanced Sustainability Profiles." *Environmental Sciences Europe* 27.1 (2015): 1-12.