

PYROWAVE

LESS CARBON.
BETTER PRODUCTS.

Environmental Impacts



A LOW-CARBON SOLUTION FOR PLASTIC WASTE

PYROWAVE is a pioneer in the electrification of chemical processes based on low carbon footprint microwaves. Our microwave technology decomposes PS waste into virgin-like, high value product thus enabling infinite recycling. PYROWAVE technology provides a circular economy solution to meet the global plastics recycling challenge. Our high-value monomer, at 99.8% purity, can be used for new packaging but also synthetic rubber and other activity sectors, such as electronics, automotive and construction. This life cycle analysis was conducted on the basis of a scenario of an industrial project in France.



THE PYROWAVE ADVANTAGE

Our technology directly decomposes plastic waste into virgin-like styrene – making the final product fully recycled and 100% traceable. Our upstream process includes a cutting-edge separation technology that removes any contaminants, including pigments and flame retardants (HBCD). After having been depolymerized with our microwave technology, the recycled styrene is safe for food contact. In addition, our equipment is modular and the number of modules can be adjusted depending on the volume of plastic waste to be treated. This allows for industrial scale operations right where the final product is needed.

100%
electric
100%
traceable

THE PYROWAVE TECHNOLOGY



82%
less greenhouse gas emissions



73%
less energy use



94%
less impact on water scarcity

Than the production of virgin styrene from fossil sources in France in 2020





COLLABORATING WITH THE VALUE CHAIN

Our Life Cycle Analysis of a scenario of an industrial project in France has shown us that 88% of the total emissions come from the upstream and downstream value chain. These emissions are common to all recycling technologies in the same context, demonstrating that it is crucial to collaborate with the entire value chain to invest in secondary sorting centers and design products for recycling.

UPSTREAM VALUE CHAIN

Collection Sorting

Prepared feedstock



47% of greenhouse gas emissions

THE PYROWAVE TECHNOLOGY



12% of greenhouse gas emissions

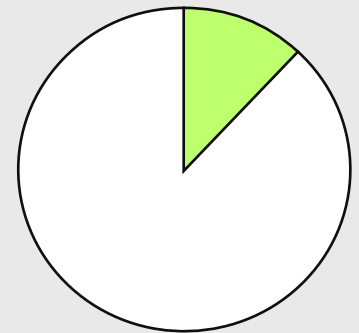
DOWNSTREAM VALUE CHAIN

Purified styrene monomer

Co-product management



41% of greenhouse gas emissions



Recycling value chain (upstream + downstream) **88%**
 The PYROWAVE technology **12%**



A ROBUST METHODOLOGY

This LCA was conducted specifically in the context of a scenario of an industrial project in France. Data was sourced from the Ecoinvent database for France in 2020. Environmental results can vary depending on a variety of factors, including sorting efficiency and electricity mix. Our data and assumptions were reviewed by a team of independent experts, including engineers. We are committed to working with stakeholders in elaborating common methodologies to compare the environmental impacts of chemical recycling technologies.

More information and a complete technical summary of our Life Cycle Analysis is available on our website, at pyrowave.com/en/durabilite pyrowave.com/en/sustainability

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