Environmental impacts of expanded polypropylene

ARPRO, ARPRO 35 Ocean, ARPRO Recycled and ARPRO REvolution

Manufacturer: JSP International

JSP is a global leader in expanded polypropylene (EPP) materials, delivering innovative, lightweight and durable solutions across automotive, HVAC, packaging and consumer applications. Through its flagship ARPRO brand, JSP provides high-performance products combining energy absorption, insulation and reusability, while enabling circular economy ambitions with fully recyclable and recycled-content solutions.

The environmental impacts of expanded polypropylene ARPRO, ARPRO 35 Ocean, ARPRO Recycled and ARPRO REvolution are based on the life cycle assessment. All the grades are produced by JSP International.

As a declared unit, the production of 1 kg of expanded polypropylene was chosen.

Based on the LCA study conducted, the following environmental impacts are declared:

1) The carbon footprint* of ARPRO products is expressed as follows:

Product type	01 EN15804+A2 (EF 3.1) Climate Change - total [kg CO_2 eq.]
ARPRO	2.45
ARPRO 35 Ocean	2.27
ARPRO Recycled	1.99
ARPRO REvolution	0.92

The results are a weighted average based on production in both production facilities in Czech Republic and France.

2) The processes accounting for the most significant part of the carbon footprint and the overall environmental impact are the production of PP granulate and thermal energy generated from natural gas. For products with a high recycled content (ARPRO REvolution), the production of recycled EPP (ARcycle) and the process CO_2 emissions also play an important role. Packaging, transport, and waste management from manufacturing play a marginal role in most impact categories.

The assessment was performed using the LCA method conducted in accordance with ISO 14040 and ISO 14044. Environmental impacts were characterised using EN 15804+A2. The assessment was performed by professional LCA software LCA for Experts, Sphera. Site-specific product data was provided by JSP International. All general process data-sets used were chosen from the Sphera database 2026.1 and the Ecoinvent 3.11 database.

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*The increase in the ARPRO carbon footprint is primarily driven by updates to the database data for primary polypropylene. The dataset used in previous ARPRO LCA studies is now outdated and no longer applicable.

These updates reflect methodological improvements rather than changes in production performance. The latest datasets are aligned with current LCA standards and incorporate revised background data, including higher emission factors for key upstream processes such as propylene production and energy supply.

As a result, the revised ARPRO carbon footprint provides a more accurate and robust representation of current conditions. Direct comparison with earlier LCA results should therefore be made with caution, as the underlying methodologies are not fully consistent.

LCA Studio

The environmental declaration developed in accordance to ISO 14021, EN ISO 14040, EN ISO 14044 and ISO 14067.