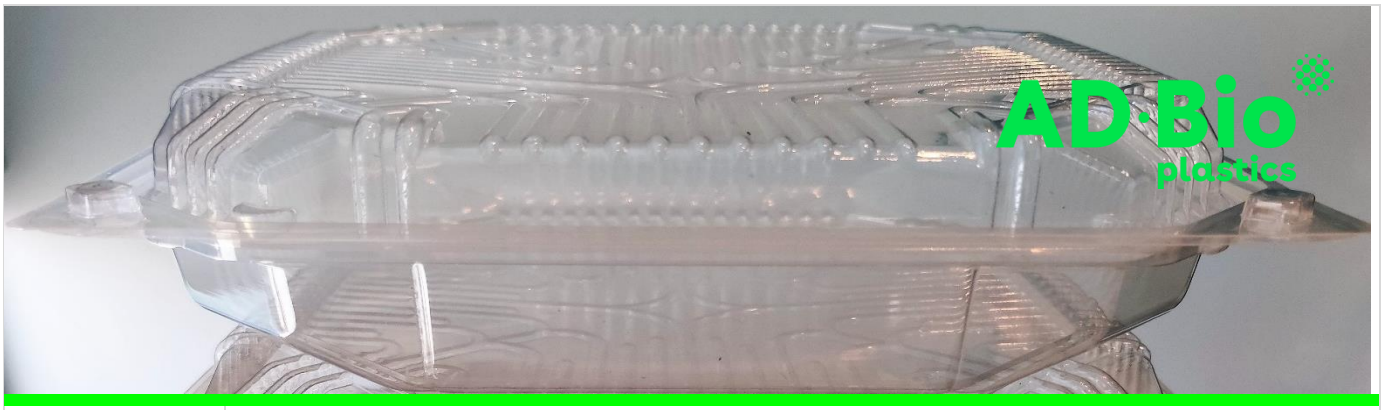

CASE STUDY

PLA-Premium	Technology:	Application:
W 721-F	**Thermoforming**	**Clamshell Packaging**

"PLA-Premium substitutes PET quality with no extra processing costs"

ADBIOPLASTICS helped a rigid plastic packaging manufacturer to introduce more sustainable biobased and compostable packaging in its portfolio, while keeping PET conventional plastic processing costs, quality performance, and existing thermoforming semi-industrial line. By processing the clamshell with PLA-Premium W 721-F grade in PET conventional equipment the customer could achieve a similar performance in volume yield and quality.

CHALLENGE	Our customer was a relevant manufacturer of rigid plastic packaging with a production site in Spain addressing the meat and convenience food sectors. The company is interested in new sustainable materials, but until this moment your first option is the recycled materials. ADBIOPLASTICS aims to demonstrate the feasibility of producing the same packaging with sustainable and compostable materials such as PLA-Premium.
SOLUTION	The product selected by the manufacturer for trial was a PET referenced clamshell (Weight 27g, width: 19,5 cm, length 18,5 cm and height: 5,5 cm), presenting some challenge in terms of design like engravings and reliefs, and in terms of processing like time of thermoforming, heating time, vacuum time, etc. Our technical team previously reviewed the customer's reference sheet and discussed with the manufacturer's staff the sheet requirements to reduce risks perception, align with existing equipment possibilities, and ensure a successful trial of PLA-Premium clamshell. PLA-Premium W 721-F made sheet was suggested as the most suitable within its range to face the challenge. Semi-industrial equipment could be easily fine-tuned by the customer along the trial.
RESULT	Immediate good clamshell was obtained on-site. The company staff assured that PLA-Premium grade should be scaled-up in fully industrial lines, despite concluding that semi-industrially processed PLA-Premium clamshell showed some differences with regard to demoulding and friction between clamshell when stacked. For both cases use of an anti-block additives or sheet treatment with silicon (using a silicon bath after the sheet production) to reduce the surface tension and plastic/plastic friction should be assessed. In any case, the result of the test and the samples were considered by the customer as satisfactory and may help it to sound the interest among customers.
HIGHLIGHTS	• **No need of new investment**: clamshell could be processed on the **same equipment**. • Very competitive time of **thermoforming process, like PET** parameters. • The **finishing and click closing system** of clamshells **performs like PET** ones. • **Freefall drop resistance** up to 1 m height simulating shipment and handling conditions, like PET. • **Similar organoleptic** results than PET in consumer panel test for fresh pastry food. • The **transparency is good**.

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