



## **WHITEPET (NUEVOS ENVASES DE PET Y R-PET BLANCO PARA LECHE UHT BASADOS EN MASTERBATCH DE CARGA MINERAL REDUCIDA)**

**CDTI PROJECT NUMBER (IDI-20161102)**

**Budget Approved: 396.306,00 Euros**

**CDTI Aid (partially refundable): 287.797,42 Euros**

The purpose of this project has been to develop a material that allows packaging for dairy products, specifically UHT milk, which is very sensitive to light. This material has been under development because the solutions on the market presented some problems during production, both in the injection and blowing phases such a generation of acrolein, high maintenance costs in molds and machinery, and ruptures of the container. Moreover, the reduction of mineral load and the combination with rPET has been studied to cover the impact on light barrier and mechanical properties.

To investigate the problems found in production, the work process consisted of injection preforms with different parameters and blowing them to compare the results. The objective was to have process windows wide enough to work with this material. The bottles obtained were tested and the properties measured were light barrier, wall thickness, top load, side wall rigidity and transport tests. Moreover, new preform designs were completed to optimize the injection process and material distribution.

To study the impact of the reduction of the mineral load on the mechanical and light barrier properties, preforms with decreasing dosages of masterbatch were injected and blown. Corresponding tests were conducted for section weight, transmittance, ash content, top load and lateral compression, obtaining results of great interest.

In the case of containers made with a percentage of rPET, its behavior was studied comparing references with only virgin PET, working on a way to minimize the grey color produced by the rPET by using some additives.

The results obtained in this project will allow us to advance in the field of white PET to obtain a solution with lower mineral content and with greater versatility to adapt the light barrier, avoiding oversizing, according to protection required; as well as in the field of application of rPET.

**This project has been co-financed by the European Regional Development Fund (FEDER) through the Plurirregional Operational Program for Smart Growth, which aims to promote technological development, innovation and quality research.**

