



WheyLayer®

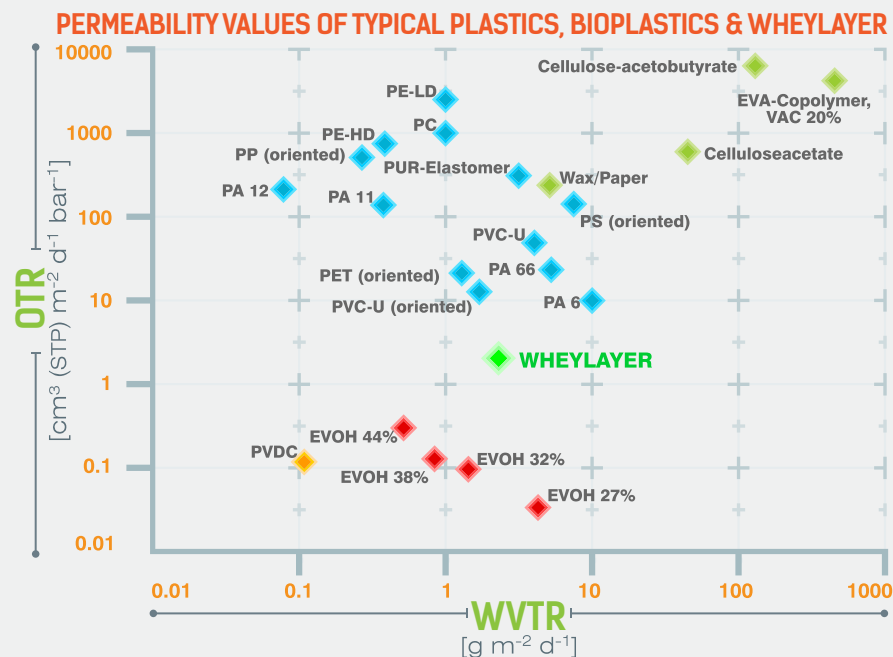
Barrier biopolymers for sustainable packaging

WHEYLAYER® a barrier packaging solution for foods, cosmetics and pharmaceuticals.

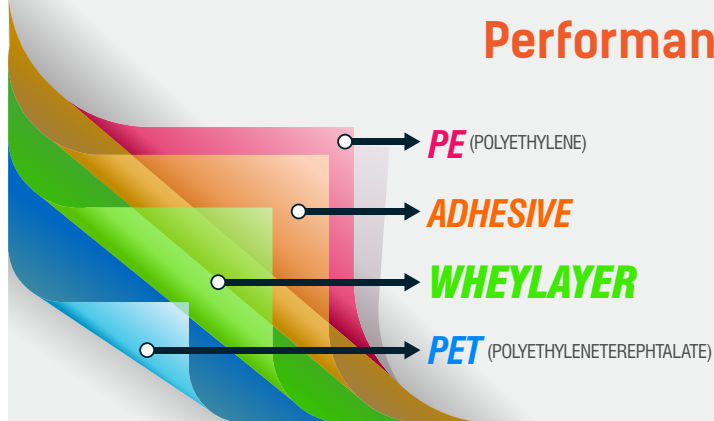
A biopolymer-coating based on whey protein for plastic films able to replace currently used expensive synthetic oxygen barrier layers such as Ethylene vinyl alcohol copolymers (EVOH) and Polyvinylidene chloride (PVDC).

WHEYLAYER® barrier performance:

- Oxygen Transmission Rate (OTR, Q_{100}) of 1 $\text{cm}^3/\text{m}^2\text{d bar}$ at 23°C and 50% RH
- Water Vapour Transmission Rate (WVTR, Q_{100}) of 2 $\text{g}/\text{m}^2\text{ d}$.



Performance & sustainability combined



The **WHEYLAYER**®-based multilayer films materials are easily recyclable as opposed to their conventional counterparts.

Life Cycle Analysis studies have shown significant reduction of the environmental impact of the resulting packaging and preliminary evaluations of the laminates fulfilled food safety regulations.

Stage of development



Towards a market ready material and process

Pilot machine for the application of the whey-protein coating at semi-industrial rate have been successfully implemented at the packaging processing facilities of LAJOVIC TUBA EMBALAŽA D.O.O. in Slovenia.

- Substrate unwinding and corona pre-treatment
- **WHEYLAYER®** coating application
- Tailored dryer designed by IRIS to optimally denature and crosslink the whey protein based coating and reach excellent barrier properties
- Winding of the coated film or optional lamination

Laminates have been converted into tubes, trays and blisters which are being validated for storing pharmaceutical, food and cosmetic products in collaboration with our industry partners:



The WHEYLAYER technology is patent pending (application IB2011/053271, positive PCT examination) and WHEYLAYER® is a registered trademark

WHEYLAYER® development has received co-development funding from the European Commission's Seventh Framework Programme (Contract 315743 & 218340-2)



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