

EXTENDO™ - multi-layer high barrier packaging reduces environmental impact

The function of packaging is more and more complex: it contains, preserves, transports, informs, and sells. However the basic role of packaging is still the protection of the product, which is – in our case – mainly foodstuff. The deterioration of food-products usually takes place in the presence of humidity and/or oxygen; therefore – in order to protect the food and extend the shelf life – the packaging must have sufficient water vapour and gas barrier properties.

One of the most valued properties of BOPP is its exceptional moisture barrier; it is at least 3 times better than a BOPET film considering the same thickness. On the other hand the oxygen barrier of BOPP is relatively poor compared to other plastic films. Although it can be improved by metallisation, sometimes the market needs transparent and/or ultra high barrier films. Coating technologies and other high gas barrier films – such as BOPA or BOPET – are also available but our multi-layer high barrier BOPP film can be a more sustainable alternative.

The concept of sustainability has also become a fundamental element of the packaging. On designing a package it must be figured out what kind of materials and processes may make it more feasible from economical point of view, reduce the weight and volume of the package, and last but not least its impact on the environment.

The most effective minimization of packaging waste is implemented in the design of the packaging itself. Prevention includes all measures aimed at reducing environmental impact in the design, production and use of packaging to the post-consumption. The main criteria of prevention that can be affected by these multi-layer high barrier films are saving of raw materials, facilitation of recycling activities, simplification of the packaging, energy saving and CO₂ reduction.

Different film grades have been developed for tray lidding, vertical and horizontal flow packaging and for single web or laminated applications. The common properties of these types are the followings: high and ultra high barrier, chlorine-free products, easy lamination and printing like standard BOPP films (no need of special adhesives or printing inks).

EXTENDO™ films are produced with a special coextrusion technology, in other words these products are not coated, the gas barrier properties are provided by an interlayer. Depending on this layer, types with different oxygen transmission rates are produced from 3 to 15 cm³/m² day. Apart from the remarkable OTR, these films have an outstanding flavour barrier as well and can be pasteurized.

From converting point of view these multi-layer films behave completely like the standard BOPP films. Since the barrier properties are not ensured by a superficial coating, OTR is not affected by scratches or abrasion of the surface which could occur during printing or lamination. For this reason the coated high barrier BOPP films can be replaced successfully.

Comparing with other high barrier films, BOPP has lower unit weight, and due to the multi-layer technology, the gas barrier properties are not influenced by the thickness. The optimization of materials is mainly aimed at reducing the size and weight of packaging maintaining the same performance.

The PET-like mineral oil barrier makes these multi-layer BOPP films an ideal substrate for internal packaging of cardboard boxes (e.g. cereal packaging).

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