

Ingenia Flexible Packaging Brief

Biaxially Oriented Polyethylene Films

(BOPE) are versatile materials used in many packaging applications. BOPE films are bringing a unique set of film properties, that will allow more laminated structures to be PE only or mono-material based, helping make flexible packaging more easily recyclable. Some applications of BOPE films/laminations include stand-up pouches, pillow packs, labels, and metalized films.

BOPE films are made in a multi-step process. In the first step, polyethylene is extruded through a flat die forming a thick film. The second step requires that the film be stretched bi-axially, making a thinner oriented film. As the film is wound it is pulled in both the machine and transverse directions. Stretching the films orients the polymer molecules in a favorable manner. This orientation is responsible for the BOPE films performance.

Benefits of BOPE Films

BOPE can experience enhanced performance over PE films which may include:

- Greater transparency
- Higher gloss
- Improved impact resistance
- Higher tensile strength
- Improved stiffness



Recyclability - There is increasing interest in the recyclability of plastic films. However, challenges exist with recycling films composed of mixed materials. For example, a traditional film structure may contain layers of polyethylene, EVOH and polyamide. Each component brings unique properties and characteristics. When it comes to recycling mixed polymer films, these materials are not miscible and can remain in distinct phases. However, BOPE films offer a solution to this challenge as it is a mono-material structure - a single material for ease of recycling.

Downgauging - Due to the films high toughness, film makers can reduce weight of packaging material while maintaining desired strength.