

## Flexible Packaging Brief

# Biaxially Oriented Polypropylene Films

Biaxially oriented polypropylene (BOPP) films are quite versatile which has led to their use primarily in packaging industries such as food and beverage, personal care products, as well as medical packaging. BOPP films also are commonly used as shrink sleeve labels, in addition to being metallized and laminated to other substrates for more complex structures.

### How are BOPP films made?

BOPP films are made in a multi-step process. In the first step, polypropylene 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 BOPP film's unique performance.

**BOPP films** are recognized for their high strength and durability. Moreover, one of the most favorable properties of BOPP films are its high clarity and excellent gloss. Other finishes are also popular with BOPP films including matte and flat white; however, these require the use of masterbatches (MBs).



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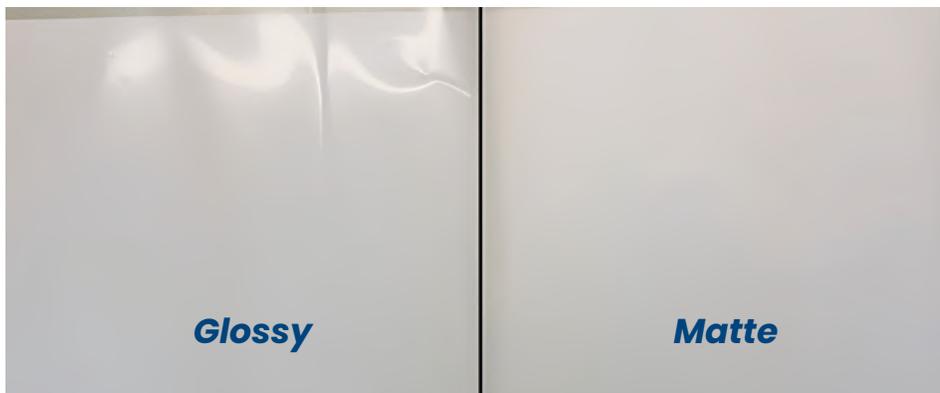
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### Masterbatches for BOPP films:

Ingenia offers both industry standard and high performing MBs and compounds for the BOPP film industry. This includes MBs for white, antifog, antistats, antiblocks, slip agents and more.

Masterbatches bring many benefits to BOPP films including:

- White masterbatches provide opacity and a great print background
- Cavitation MBs designed for both standard packaging and outdoor applications
- Matte effect compounds for improved aesthetics
- Antifog with good cold fog and hot fog performance
- Antistats to improve processing and film performance
- Slips to allow for tailoring of coefficient of friction properties
- Antiblocks which prevent film blocking while minimizing any change to optical properties



***Ingenia has the technical knowledge and manufacturing experience to recommend standard and specialty MB solutions for BOPP film producers.***