



## RESIN

1

Plastic resin pellets are small granules with a diameter of only a few millimeters. These plastic particles are industrial raw material from which "user plastics" are made. There are many different types of resin, each with different performance and color characteristics. Polyethylene resin, the most common in the world, is found in a wide variety of molded, finished products.



## EXTRUSION

2

A technique for producing film. A mixture of resin is fed through a heated barrel, where it is melted and forced out through a circular die into a bubble-like shape. As the bubble reaches its highest point and begins to cool, the film is flattened out, and wound onto rolls that are 80" to 95" wide. A typical extrusion machine can produce an average of 8,000 lbs. of film during an 8-hour shift.



## PRINTING

3

There are two types of printing, Reverse and Surface. The type you choose depends on the product being packaged. Surface Printing, the most commonly used, applies ink to the outermost surface of a film. Reverse Printing applies ink to the backside of the outermost layer, and then traps the ink with a lamination layer. Reverse Printing prevents the product from coming into contact with the ink, and protects the print from harsh environments.



## CONVERTING

4

The process by which extruded film rolls, printed or plain, are folded, cut, perforated and side-and bottom-sealed into pre-formed plastic bags. Some bags include re-closable zippers, re-sealable flaps, easy-open perforations, or other features that are all added during the conversion process. These bags are then daisy chained together and wound onto rolls or wig-wagged into a box. The bags are then used on a variety of automated packaging systems.

# APS 101: How a bag is made

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