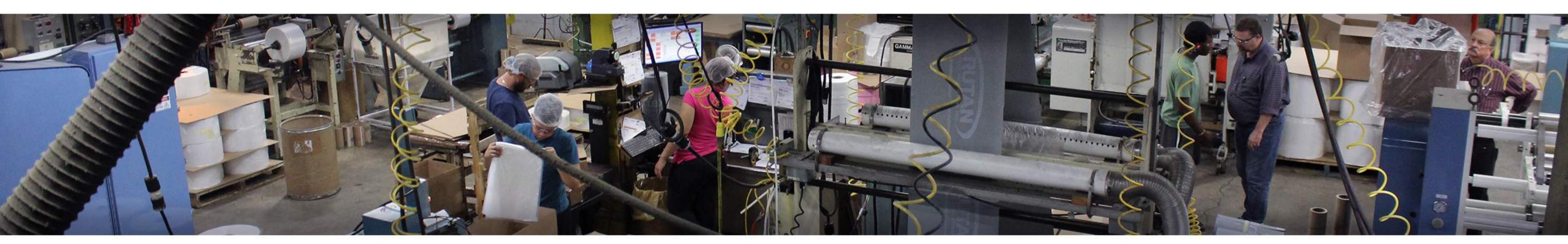


# How Plastic Bags Are Manufactured

We use them every single day. From grocery shopping to taking out the trash and transporting goods, flexible packaging solutions have become essential for use at both work and home. With so many everyday applications, you may wonder, how exactly are plastic bags made? In this whitepaper, you'll get the answers you've been looking for as we take an in depth look into the processes used to create different types of plastic bags!



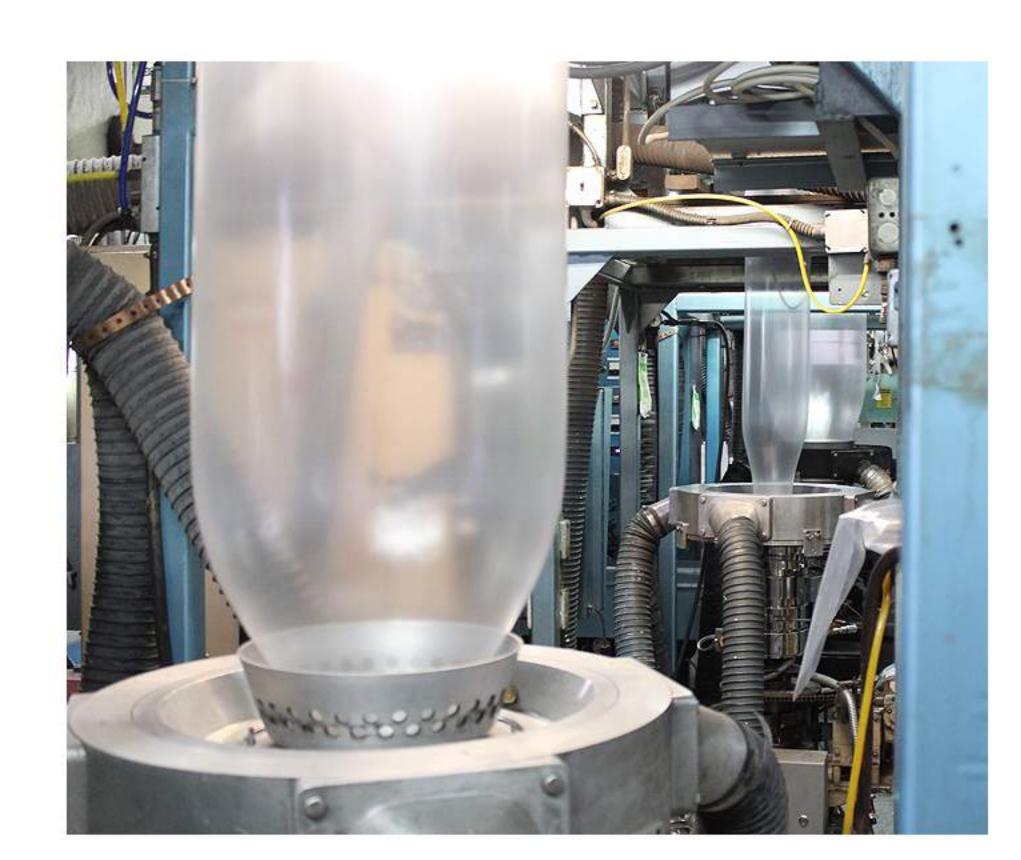
At Rutan, we have over 50 years of experience in creating and manufacturing plastic bags. Over that time, we've learned a thing or two about the manufacturing process and we want to pass that on to you. But first, why is it important to know how plastic bags are made?

You can always take a manufacturer's word at face value, but when you know how plastic bags are created, you will know the difference for yourself between a quality made product and an imitation. Not all bags are created equal, but at Rutan, we pride ourselves on creating the best flexible packaging solutions using quality materials that are designed with your specific needs in mind.

## Bags Made With Quality Materials

More than ten million tons of polyethylene is produced each year, making it one of the most widely produced plastics in the world. Polyethylene is a thermoplastic polymer with a variable crystalline structure with an extremely large range of applications depending on the type. Although there are several types of polyethylene structures, the two most popular are high and low density.

At Rutan, we take this process very serious. We begin with our own custom blend of polyethylene film. Unlike many other manufacturers, we extrude this film in-house so that we can make the bag custom to each client. Whether your bags need specific variations of colors, UVI protection, or non-slip surfaces, we can create these products from scratch. After extrusion, we are able to customize your bags even further with custom printing and other options to make your bags as unique as your brand. We can even put pin holes in each bag so that they are properly ventilated, allowing air to escape when filling with your product. Once the bags are created to meet your exact specifications, they are put on a pallet and shipped to you!





American Manufacturer

#### How It's Made

As we've said, all of our bags are made in-house, giving us the knowledge on how to make the best bag and the ability to ensure quality every step of the way. Generally speaking, the plastic bags we use every day are made from pellets of linear polyethylene resin. These pellets are blended into a homogenous material and then melted in a high temperature extruder, producing a film that can be up to 700 feet long. Once cooled, this film is flattened to make it easier to work and shape into the required width. Films are then rolled up to into large rolls.



These rolls are used in conjunction with machinery to make bags that contain custom features, such as handles, zippers, printing, and more. Bags are cut from the film into the required size and then are automatically sealed using heat. Each of these custom options are made with the use of precise automated machinery, giving each bag the desired shape and uniform design across each bag type.

### Bags With Different Purposes

Not all bags are created equal. Because of our ability to create exactly what you need, depending on what you are packaging and how it is being stored, we can recommend specific materials for your bags that will give you the best possible usage for your product.









If you are doing business in the food industry, you probably already know the importance of the U.S. Food and Drug Administration's FDA compliant plastic packaging requirements. Regardless of the bag construction you choose, Rutan can manufacture materials to adhere to the U.S. Food & Drug Administration's (FDA) regulations. At Rutan, we know the ins and outs of these regulations that require greater purity standards than general plastic materials used for non-food packaging.

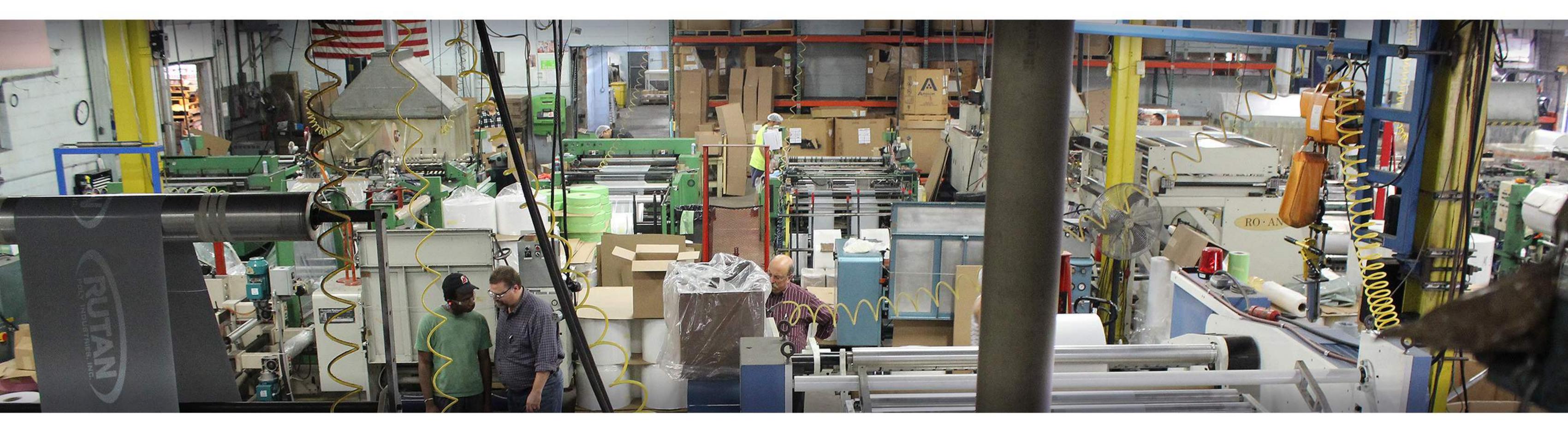


## Bags With Different Purposes (cont.)

When your business is transporting products, you may want to consider non-slip bags. This type of material will give an extra layer of security for transportation on pallets. These bags are commonly used when transporting heavier contents, such as bags of mulch.

At Rutan, we're doing our part to keep compost and mulch in the bag by creating poly bags specifically designed for compost and mulch sale and transportation. If you've ever carried a bag of mulch, you know how heavy it can be. The bags can weigh 50 pounds or more! To manage the weight, Rutan blends a variety of materials in a low density bag to ensure strength that will prevent the bag from tearing. We also use the non-slip material in our blend so you can stack bags without fear of them sliding.

These are just a few examples of what we can do for you and your industry! Over the years, we have supplied all types of plastic bags to companies in many industries. We are happy to say that our customers have become customers for life. The one thing we hear from them more than anything else is how valued they feel by our customer service team. This is no coincidence. From the time our company was founded, we have made customer service a big priority. Everything we do, from bag design, to construction, to answering your questions, is all done to serve you.



We take pride in our highly-trained professionals, state-of-the-art equipment, and refined processes that create some of the finest flexible packaging available in the market. We offer unmatched quality at competitive prices—a combination that is hard to find from a U.S. manufacturer. If you're looking for a partner to help your company navigate your options for customizable poly bags, look no further than Rutan. Our customer service team is ready to answer your questions and find the perfect solution for your flexible packaging needs. Give us a call today at 201-529-1474.