



# About Plastic Resins

The information provided below is intended to provide a relative comparison of plastic resins and should only be used as guide during the selection process. It is not possible to determine if the containers we sell are suitable for your application based solely on the information below. Compatibility testing is, and will always be, the final determining factor in the container selection process. It is the buyers responsibility to make the final determination as to whether a given container, closure, and accessory is suitable for use in their application. Freund Container will be happy to provide you with a sample container for testing purposes.


## PET & PETG

 are durable materials with excellent gloss, clarity and impact resistance desired for clear bottles. PET & PETG containers are ideal for personal care, food, beverage, and pharmaceutical products. When you want the appeal of glass, but want the safety, lightweight, and convenience of plastic, choose PET & PETG. For products, please select [PET/PETG Plastic Bottles](#), [PET/PETG Plastic Jars](#), or [PETG Plastic Jugs](#),


## Low Density Polyethylene (LDPE)

 is very similar to HDPE in composition, but it is less rigid and is generally less chemically resistant. LDPE, however, is more translucent and flexible than HDPE. LDPE is ideal for use with products requiring flexible and squeezable packaging such as shampoo, conditioners, adhesives, and many others. LDPE bottles usually have a much glossier finish than comparable HDPE bottles. For products, please select [LDPE Plastic Bottles](#).

## High Density Polyethylene (HDPE)

 is the most widely used resin for extrusion blown plastic bottles. HDPE is economical, impact resistant, and provides a good moisture barrier. HDPE is best known for its naturally translucent appearance and flexibility. It is compatible with a wide range of products including acid concentrates and some caustics, but is not compatible with solvents. It is usually supplied in FDA approved food grade. HDPE is naturally translucent and flexible. The addition of color will make HDPE opaque although not glossy. HDPE offers good protection at below freezing temperatures, but must not be used with products filled at over 180°F or products requiring a hermetic seal. For products, please select [HDPE Plastic Bottles](#), [HDPE Plastic Jars](#), or [HDPE Plastic Jugs](#).

## Polypropylene (PP)

 is a naturally translucent material which provides an excellent moisture barrier. Polypropylene is very stability at high temperatures (up to 200°F) which allows it to be used in hot fill applications such as pancake syrup. In addition, it works very well to preserve the freshness and flavor of dried foods, which makes it ideal for storing spices, dried fruit, or flour. Polypropylene is also autoclavable (can withstand a strong, pressurized, steam-heated vessel for the purpose of sterilization) and offers the potential for steam sterilization. PP

has excellent chemical resistance, but provides poor impact resistance in cold temperatures. For products, please select [PP Plastic Bottles](#), [PP Plastic Jars](#), or [PP Plastic Vials](#).

### **Polystyrene (PS)**



provides the crystal appearance and stiffness of glass. It also works well as an oxygen barrier to preserve freshness. Polystyrene, however, provides poor to moderate resistance to impact, temperature, and UV exposure. For products, please select [PS Plastic Jars](#), or [PS Plastic Vials](#).



### **Polyvinyl Chloride (PVC)**

is naturally clear (can be hazy in thicker forms), has extremely good resistance to oils, and has very low oxygen transmission. It provides an excellent barrier to most gases and its drop impact resistance is also very good. This semi-rigid material is also very chemically resistant, but it is vulnerable to solvents. Most PVC containers will distort at 160°F, making it incompatible with hot filled products. Since it provides a good oxygen barrier, PVC is an excellent choice for salad oil, mineral oil, and vinegar. It is also commonly used for shampoos and cosmetic products. For products, please select [PVC Plastic Bottles](#).

## **PLASTIC PROPERTIES**

