

## Materials Guide

The selection of materials is of paramount importance. The proper package should be functional, protect the product, and have merchandising appeal. Significant chemical properties such as vapor transmission, chemical compatibility, gas transfer rate, permeation and pigmentation must be considered. In addition, certain physical properties such as impact strength, light transmission, stress cracking, cold fracturing, and structural design are also important.

The chart below is a useful guide in judging probable performance of different plastic container materials. It is just a guide. Being certain that a specific type of plastic material will serve all of the needs of a specific product is complicated and may not be determined simply from this chart.

	Oriented Polystyrene (OPS)	Polyestar (PET)	Polyethylene L/D	Polyethylene H/D	Polypropylene	Polystyrene (HIPS)	PETG	PVC
Resin Density gms	1.05	1.35	0.91 to 0.925	0.94 to 0.965	0.89 to 0.91	1.0 to 1.1	1.27	1.35
Clarity	clear & colors*	clear & colors*	hazy transparent	hazy transparent	moderate hazy	clear & colors*	clear	clear & colors*
Moisture Barrier	fair to good	fair to good	good	good to excellent	good to excellent	poor to fair	fair to good	fair
Oxygen Barrier	fair to good	good	poor	poor	poor	good	good	good
Resistance to Acids	good to excellent	fair to good	fair to very good	fair to very good	fair to good	fair to good	fair to good	fair to excellent
Resistance to Grease & Oil	??	good	good	good	good	fair to good	good	good
Temperature at Which Distorts	?? 180°F	125°-160°F	180°-220°F	200°-250°F	230°-260°F	200°-220°F	145°F	140°-150°F
Rigidity/Stiffness	high	moderate to high	low	moderate	moderate to high	moderate to high	moderate to high	moderate to high
Resistance to Impact	??	good to excellent	excellent	good to excellent	poor to good	poor to good	good to excellent	fair to good
Resistance to Heat	??	poor to fair	fair	good	good	fair	poor to fair	poor to fair
Resistance to Cold	??	good	excellent	excellent	poor to fair	poor	good	fair
Resistance to Sunlight	??	good	fair	fair	fair	fair to poor	good	poor to good

\*Colors typically require substantial film orders.

We at Buckell Plastic Co. can assist you in making your decision. Our access to technical support personnel of suppliers helps us in providing this service. As the buyer, however, you must make the final determination as to whether a given material is proper, suitable, and safe for use with your product. You must assume full responsibility for this final determination.