

## Plastic Mono-materials

## Plastic Laminates

## Biomaterials

Material Properties	APET	PETG	PP (copo)	PP (homo)	PP (random)	PS (GPPS)	HIPS	OPS	PE	PVC	CPET	APET/PE	PET/ EVOH/PE	PP/ EVOH/PP (PP copo)	PP/ EVOH/PP (PP homo)	PLA	PHA/PHB
Specific Gravity g/cm	1.33	1.1	0.91	0.91	0.91	1.05	1.05	1.06	0.96	1.35	1.37	1.33	1.33	0.91	0.91	1.25	1.25
Transparency	++	++	+/-	+	++	+	+/-	++	+/-	++	--	++	++	+/-	+	++	+/-
Gloss	++	++	+/-	+/-	+/-	+	-	++	+/-	+	--	++	++	+/-	+/-	++	-
Max Temperature	60 C	85 C	125 C	125 C	125 C	95 C	95 C	85 C	90 C	60 C	220 C	60 C	60 C	125 C	125 C	50 C	50 C
MinTemperature	-20 C	-30 C	-40 C	0 C	-20 C	-20 C	-20 C	0 C	-40 C	0 C	-20 C	-20 C	-20 C	-40 C	0 C	0 C	0 C
Rigidity	++	++	+/-	+	+	++	+	++	+	+/-	++	++	++	+/-	+	++	++
Impact Resistance	++	+	+	+/-	+	-	+/-	-	++	+	+/-	++	++	+	+/-	-	-
Splitting Resistance	++	+	+	+	+	+/-	+	-	+	+	+/-	++	++	+	+	-	-
Oxygen Barrier	+	+/-	-	-	-	--	--	--	-	+	+/-	+	++	++	++	+/-	+
Moisture Barrier	+	+/-	++	++	++	-	-	-	++	+	+	+	+	++	++	--	+
Deep-freeze Resistant	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No
Microwavable	No	No	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No	No	Yes	Yes	No	No
Oven Resistant	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No
Resistant to Oil and Fat	++	+	++	++	++	--	+	-	++	++	++	++	++	++	++	++	++
Sealability	+	+	++	++	++	+/-	+	+/-	++	++	+	++	++	++	++	+/-	+/-
Recyclable	++	++	++	++	++	++	++	++	++	++	++						
Plastic Symbol	1	1	5	5	5	6	6	6	2	3	1	7	7	7	7		
Food Grade	Yes	Yes	Yes	Yes	Yes				Yes		Yes						
Bio-Degradable	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes