



Plastic Properties: Mono-materials | Laminates | Biomaterials

Plastic Mono-Materials

Material Properties	APET	PETG	PP (copo)	PP (homo)	PP (random)	PS (GPPS)	HIPS	OPS
Specific Gravity g/cm	1.33	1.1	0.91	0.91	0.91	1.05	1.05	1.06
Transparency	A	A	C	B	A	B	C	A
Gloss	A	A	C	C	C	B	D	A
Max Temperature	60 C	85 C	125 C	125 C	125 C	95 C	95 C	85 C
Min Temperature	-20 C	-30 C	-40 C	0 C	-20 C	-20 C	-20 C	0 C
Rigidity	A	A	C	B	B	A	B	A
Impact Resistance	A	B	B	C	B	D	C	D
Splitting Resistance	A	B	B	B	B	C	B	D
Oxygen Barrier	B	C	D	D	D	E	E	E
Moisture Barrier	B	C	A	A	A	D	D	D
Deep-freeze Resistant	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Microwavable	No	No	Yes	Yes	Yes	No	No	No
Oven Resistant	No	No	No	No	No	No	No	No
Resistant to Oil and Fat	A	B	A	A	A	E	B	D
Sealability	B	B	A	A	A	C	B	C
Recyclable	A	A	A	A	A	A	A	A
Plastic Symbol	1	1	5	5	5	6	6	6
Food Grade	Yes	Yes	Yes	Yes	Yes			
Biodegradable	No	No	No	No	No	No	No	No

E = Poor D = Moderate C = Fair B = Good A = Very Good



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Plastic Laminates

Material Properties	PE	PVC	CPET	APET/PE	PET/EVOH/PE	PP/EVOH/PP (PP copo)	PP/EVOH/PP (PP homo)
Specific Gravity g/cm	0.96	1.35	1.37	1.33	1.33	0.91	0.91
Transparency	C	A	E	A	A	C	B
Gloss	C	B	E	A	A	C	C
Max Temperature	90 C	60 C	220 C	60 C	60 C	125 C	125 C
Min Temperature	-40 C	0 C	-20 C	-20 C	-20 C	-40 C	0 C
Rigidity	B	C	A	A	A	C	B
Impact Resistance	A	B	C	A	A	B	C
Splitting Resistance	B	B	C	A	A	B	B
Oxygen Barrier	D	B	C	B	A	A	A
Moisture Barrier	A	B	B	B	B	A	A
Deep-freeze Resistant	Yes	No	Yes	Yes	Yes	Yes	No
Microwavable	Yes	No	Yes	No	No	Yes	Yes
Oven Resistant	No	No	Yes	No	No	No	No
Resistant to Oil and Fat	A	A	A	A	A	A	A
Sealability	A	A	B	A	A	A	A
Recyclable	A	A	A				
Plastic Symbol	2	3	1	7	7	7	7
Food Grade	Yes		Yes				
Biodegradable	No	No	No	No	No	No	No

Biomaterials

PLA	PHA/PHB
1.25	1.25
A	C
A	D
50 C	50 C
0 C	0 C
A	A
D	D
D	D
C	B
E	B
No	No
No	No
No	No
A	A
C	C
Yes	Yes

E = Poor D = Moderate C = Fair B = Good A = Very Good

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