Mayku Materials

Make fully transparent prototypes, detailed final parts and cast complex objects with flexible molds.

MAYKU MULTIPLIER SHEET MATERIALS:

p.02-03 PETG
- Transparent and food-safe

p.04-05 HIPS
- Opaque for casings

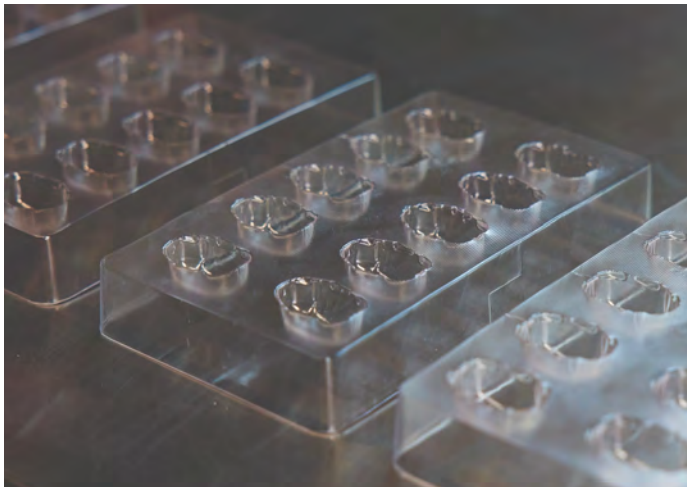
p.06-07 EVA
- Flexible for complex shapes

Mayku PETG Sheets

A transparent and food-safe sheet ideal for making reusable molds. The non-stick surface and high impact strength of these rigid sheets allows for easy de-molding. Perfect for making custom chocolate molds and product packaging.

Fully recyclable. Hand wash only.

Magnolia petal-shaped chocolate mold by Philip Khoury.



Beetle-shaped bon bon chocolate molds by Paul A. Young.

GENERAL

Property	Method	Unit	HIPEX® G
Density	DIN EN ISO 1183-1	g/cm^3	1.27
Rockwell hardness	EN ISO 2039-1 / ASTM D-785	R-Scale	105
Melting point		°C	230-250
Glass transition temperature		°C	80-85

MECHANICAL

Property	Method	Unit	HIPEX® G
Flexural modulus	DIN EN ISO 178	MPa	1900
Flexural strength	DIN EN ISO 178	MPa	70
Tensile modulus	DIN EN ISO 527-2	MPa	2000
Tensile strength	DIN EN ISO 527-2	MPa	50
Elongation	DIN EN ISO 527-2	%	60
Impact strength - Izod (notched)	DIN EN ISO 180/4A	kJ/m^2	11.5
Impact strength - Charpy (notched)	DIN EN ISO 179-1/1eA	kJ/m^2	7
Impact strength - Charpy (unnotched)	DIN EN ISO 179-1	kJ/m^2	NB (no break)

OPTICAL

Property	Method	Unit	HIPEX® G
Light transmisson (3 mm clear transparent)	DIN EN ISO 13468-1	%	88
Refractive index	DIN EN ISO 489	n_D^{20}	1.57
Haze	ISO 14782 / ASTM D1003	%	<1
Solar energy transmittance g-valve	DIN EN 410	%	3 mm 83 / 10 mm 78

THERMAL

Property	Method	Unit	HIPEX® G
Forming Temperature		°C	160
VICAT - Temperature (method B50)	DIN EN ISO 306	°C	70
Heat Deflection Temp. (A/B)	DIN EN ISO 75-2	°C	72/68
Specific Heat Capacity	DIN EN ISO 11357-4	J/gK	1.1
Coefficient of linear thermal expansion	DIN 53752 / ISO 11359-2	mm/m °C	0.068
Thermal conductiviy	DIN 52612 / DIN EN ISO 22007-1	W/mK	0.20
Degradation temperature		°C	>280
Max. service temperature continuous use		°C	60
Max. service temperature short term use		°C	70
Forming temperature		°C	120 - 160

ELECTRICAL

Property	Method	Unit	HIPEX® G
Dielectric constant (100 Hz)	IEC 250 / DIN 53483-2		2.6
Volume Resistivity	IEC 60093 / DIN EN 62631-1-3-1 ASTM D257	Ω.cm	$>10^{15}$
Surface Resistivity	IEC 60093 / DIN EN 62631-1-3-2 ASTM D257	Ω	$>10^{16}$
Dielectric strength	IEC 60243-1 / ASTM D149	kV/mm	16
Dissipation factor (50 Hz)	IEC 250 / DIN53483-2		0.01

OTHERS

Property	Method	Unit	HIPEX® G
Fire performance (building product) up to 10 mm	DIN 4102-1	Technical Approval	B1
Fire performance up to 10 mm	DIN EN13501-1	Classification	B-s1, d0
Biocompatibility (skin contact)	DIN EN 10993-5	Classification	not cytotoxic

Note: These technical data of our products are typical ones; the actually measured values are subject to production variations.

Mayku HIPS Sheets

A versatile sheet that delivers smooth white satin forms. Great for electrical product casings, product packaging and final parts. Sheet can be cast but not recommended for repeat applications.

Fully recyclable. Hand wash only.

Webcam casings by Beta Design Office.

Mouse casings by Beta Design Office.

GENERAL

Property	Method	Unit	POLYCASA® HIPS Glossy/Matt	POLYCASA® HIPS Matt/Matt
Density	ISO 1183	g/cm^3	1.05	1.05
Burning resistance	UL standard 94		94 HB	94 HB
Melting point		°C	160-180	160-180
Glass transition temperature		°C	88-92	88-92
Forming temperature		°C	160	160

MECHANICAL

Property	Method	Unit	POLYCASA® HIPS Glossy/Matt	POLYCASA® HIPS Matt/Matt
Flexural modulus	ISO 178	MPa	1850	1800
Flexural strength	SO 78	MPa	34	32
Tensile modulus	ISO 527-2	MPa	1730	1670
Tensile strength	ISO 527-2	MPa	24	20
Elongation at break	ISO 527-2	%	2.9	42
Stress a break	ISO 527-2	MPa	18	16
Ball indentation hardness	ISO 2039-1	N/mm^2	80	80

THERMAL

Property	Method	Unit	POLYCASA® HIPS Glossy/Matt	POLYCASA® HIPS Matt/Matt
Vicat temperature (B 50)	ISO 306	°C	92	91
Heat defection temperature (A)	ISO 75-2	°C	82	84
Linear thermal expansion	DIN 53752	$K^{-1}x10^{-5}$	8	8
Service temperature continuous use	DIN 52612*	°C	70	70
Thermal conductivity	ISO 11501*	W/mK	0.16	0.16
Dimensional change on heating (4mm)	ISO 15015	%	5	5.5

ELECTRICAL (raw material specification)

Property	Method	Unit	POLYCASA® HIPS Glossy/Matt	POLYCASA® HIPS Matt/Matt
Volume resistivity	IEC 93	Ω.cm	$>10^{16}$	$>10^{16}$
Surface resistivity	ICE 93	Ω	$>10^{13}$	$>10^{13}$
Dielectrical strength	IEC 243-1	KV/mm	155	155
Dielectrical constant at 100Hz- 1 MHz	IEC 250		2.5	2.5
Dielectrical factor at 100Hz- 1 MHz	IEC 250		$>10^{-4}$	$>10^{-4}$

IMPACT STRENGTHS

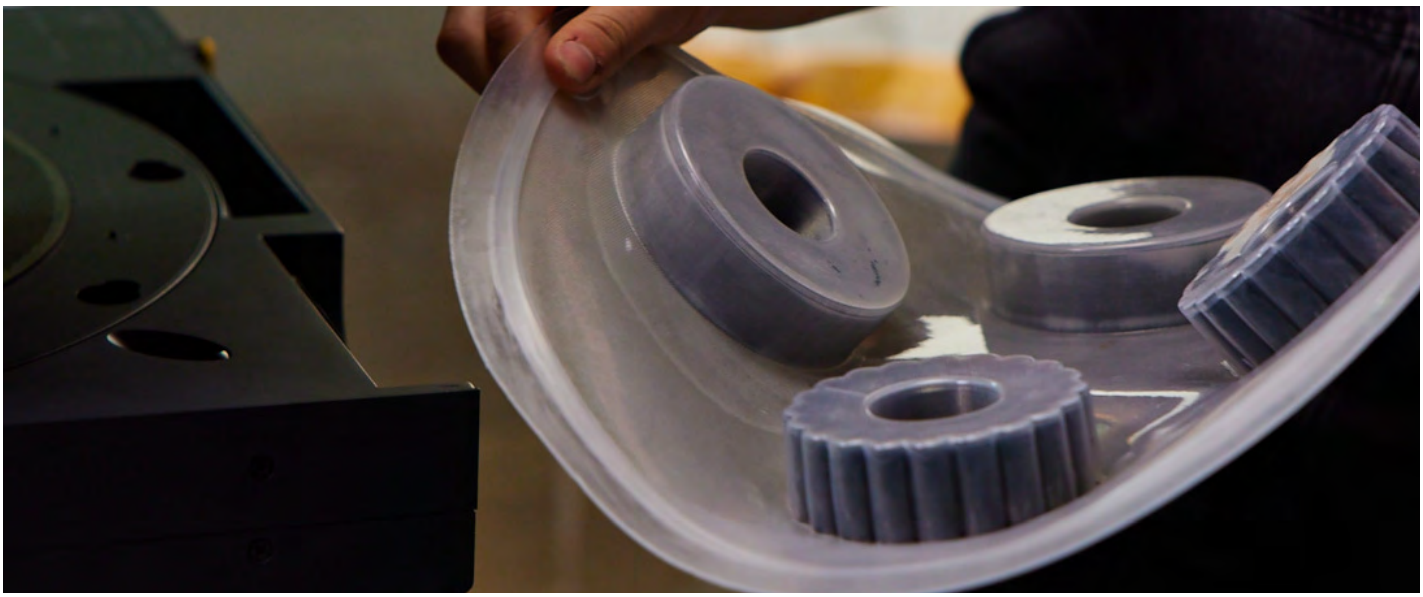
Property	Method	Unit	POLYCASA® HIPS Glossy/Matt	POLYCASA® HIPS Matt/Matt
Charpy notched glossy side impacted	ISO 179-1/1fA	KJ/m^2	9	-
Charpy notched matt side impacted	ISO 179-1/1fA	KJ/m^2	6	10

Note: all mentioned data is based on extruded sheets in a thickness of 4mm.
These technical data of our products are typical ones, the actually measured values are subject to production variations.

Mayku EVA Sheets

A transparent sheet material that remains flexible after it has been formed. This flexibility improves the de-molding experience and enables users to incorporate small undercuts and vertical walls into their designs. It's natural softness makes it perfect for picking up very fine detail and high resolution textures.

Hand wash only.



Mouse casings made on The Mayku Multiplier.

Mouse casings by Beta Design Office.

PHYSICAL

Property	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.938 g/cm^3	0.938g/cm^3	ASTM D1505
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.5g/10 min	2.5g/10 min	ASTM D1238
Vinyl Acetate Content	18.0 wt%	18.0 wt%	

MECHANICAL

Property	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield	640 psi	4.41 MPa	
Break	2130 psi	14.7 MPa	
Tensile Elongation (Break)	800%	800%	ASTM D638
Flexural Modulus	2130 psi	14.7 MPa	ASTM D790

HARDNESS

Property	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness (Shore A)	• 88 • 38	• 88 • 38	ASTM D2240

THERMAL

Property	Nominal Value (English)	Nominal Value (SI)	Test Method
Brittleness Temperature	-94.0°F	-70.0°C	ASTM D746
Vicat Softening Temperature	140°F	60.0°C	ASTM D1525
Melting Temperature	183°F	84.0°C	

INJECTION

Property	Nominal Value (English)	Nominal Value (SI)
Processing (Melt) Temp	302 to 356°F	150 to 180°C

Note: Typical properties - these are not to be construed as specifications.

Visit materials.mayku.me to order sheets.