

# PLASTICRAFT

## TECHNICAL DATA SHEET High Impact Polystyrene (HIPS)

High Impact Polystyrene (HIPS) sheet is a versatile, cost effective material. HIPS provide single and multilayer sheet structures. They are engineered from the toughest polystyrene resins to add a superior balance of enhanced properties for color control, higher gloss, UV protection, appearance, stiffness, deep-draw formability, and high impact strength.

### TYPICAL PROPERTIES of POLYSTYRENE

ASTM or UL test	Property	GP-PS	HI-PS
<b>PHYSICAL</b>			
D792	Density (lb/in <sup>3</sup> ) (g/cm <sup>3</sup> )	0.043 1.05	0.043 1.04
D570	Water Absorption, 24 hrs (%)	0.06	0.01
<b>MECHANICAL</b>			
D638	Tensile Strength (psi)	7,500	4,000
D638	Tensile Modulus (psi)	450,000	260,000
D638	Tensile Elongation at Break (%)	47	55
D790	Flexural Strength (psi)	6,100	8,700
D790	Flexural Modulus (psi)	475,000	280,000
D695	Compressive Strength (psi)	14,500	7,500
D785	Hardness, Rockwell	75M	56L
D256	IZOD Impact Notched (ft-lb/in)	0.8	2
<b>THERMAL</b>			
D696	Coefficient of Linear Thermal Expansion (x 10 <sup>-5</sup> in./in./°F)	4.0	4.2
D648	Heat Deflection Temp (°F / °C) at 264 psi	200 / 95	195 / 92
D3418	Vicat Softening Temp (°F / °C)	224 / 107	214 / 102
-	Max Operating Temp (°F / °C)	150 / 65	140 / 60
C177	Thermal Conductivity (BTU-in/ft <sup>2</sup> -hr-°F) (x 10 <sup>-4</sup> cal/cm-sec-°C)	- -	- -
UL94	Flammability Rating	H-B	H-B
<b>ELECTRICAL</b>			
D149	Dielectric Strength (V/mil) short time, 1/8" thick	60	45
D149	Dielectric Constant at 1MHz	2.5	2.7
D495	Arc Resistance (sec)	70	100
D257	Volume Resistivity (ohm-cm)at 50% RH	>10 <sup>16</sup>	>10 <sup>16</sup>

#### Benefits

- Good impact strength
- Easy to fabricate
- Good depth of draw ratio
- Good dimensional stability
- Fully recyclable with minimal loss in properties

#### Applications

- Packaging
- Electrical/Electronic Applications
- Housing
- General purpose
- Signage
- Appliance
- Recreational

#### SHAPES AVAILABLE



NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets.  
All values at 73°F (23°C) unless otherwise noted.