



HIPS

High Impact Polystyrene

Description	
HIPS can be processed by all conventional techniques using standard conditions and has well balanced properties in terms of impact, rigidity and surface gloss. PS a very versatile material suitable for many applications and is used extensively in the production of sheet for packaging and vacuum forming.	
Typical Applications	
Closures, caps, canisters, dairy packaging, storage boxes, refrigerator interiors., toys	
Types of grade available	
Injection moulding High Gloss Extrusion Flame retardant	
General Processing	
Drying Time	N/A
Drying Temperature	N/A
Type of Drier	N/A
Purging	No need to purge with another material
Moisture Absorption	<0.1%
Other Considerations	Lubricated and un lubricated grades available
Processing Injection Moulding	
Barrel Settings	150 - 220°C (300 - 428°F)
Injection speed	Medium
Injection Pressure	700 – 1000 psi
Back Pressure	70 – 120 psi
Screw Speed	Medium / High
Tool Temperature	20C
Melt Temperature	170 - 235°C (170 - 455°F)
Processing Stability	Good resistance to heat, residence time 5 minutes
Gate Considerations	Edge, pin, fan, sprue and submarine gates all used
Processing Extrusion	
Barrel Settings	150c-220c
Screw Speed	Screw, 25 - 30 L/D
Screen Packs	Yes
Haul-off / Cooling	Water cooling bath 10c

Calibration	Good melt strength for use with calibration sizing plates
Mechanical Properties	
Shrinkages	0.2 – 0.8%
Flexural Strength	24 -93 MPa
Tensile strength at Yield	25 MPa
Physical Properties	
Density	1.03
Cold Bend	N/A
Cold Flex	N/A
Elongation at Break	2 - 85%
Tensile Modulus	1.1 - 4 MPa
Charpy notched impact strength at 23°C	8 kJ/m ²
Material Finish	Opaque with a with mat finish
Thermal Properties	
Vicat Softening Temperature	85°C
Heat Deflection Temperature (HDT/A)	74°C
Flammability	
Flammability Rating	94 HB (Flame retardant grades are available)
Weatherability	
Suitability for outdoor use	Prone to environmental stress cracking so not suitable for outdoor use
Fillers & Additives	
	Can be modified with flame retardant additives and barium sulphate
Chemical Resistance	
Resistant to	Aqueous solutions of salts, acids and alkalis
Not resistant to	Aromatic and chlorinated hydrocarbons, esters, ethers
Food Contact Status	
	Most grades comply with European & USA requirements
Colouring	
	Can be readily coloured by a range of techniques, for example, dry colouring, masterbatches and liquid colouring
WEEE & ROHS Compliance	
	Yes
Bonding	
	May be bonded by solvents
Welding	
	May be joined by ultrasonic welding

This information has been provided as a general guide and we suggest that you carry out your own specific tests to be sure that this material is suitable for your application.