



GPPS General Purpose Polystyrene

Description	
This is a clear material but does not have a good degree of impact strength or toughness unless a high molecular weight grade is used. A widely used economic clear styrene	
Typical Applications	
Toys, containers, CD cases, disposable tumblers, advertising aids, medical applications	
Types of grade available	
Very high flow grades – MFI 25	
High molecular weight grades with improved impact and heat resistance – MFI 3	
Reprocessed	
Optical Properties	
Transmission	88%
General Processing	
Drying Time	N/A
Drying Temperature	N/A
Type of Drier	N/A
Purging	DYNA-PURGE C
Moisture Absorption	Low
Other Considerations	Poor impact strength and low abrasion resistance, bear this in mind when mouldings are handled
Processing Injection Moulding	
Barrel Settings	190C to 240C
Injection speed	Medium to High
Injection Pressure	Medium
Back Pressure	Low
Screw Speed	Low
Tool Temperature	20 to 65C
Melt Temperature	220 to 240C
Processing Stability	Good resistance to heat, max residence time 5 minutes
Gate Considerations	Edge, tab, pin, film and submarine gates are all used
Sprue & Runner Considerations	Typical runner sizes range from 4mm to 6mm. Runner lengths to be kept as short as possible
Processing Extrusion	
Barrel Settings	215C to 245C
Screw Speed	50 -rpm

Screen Packs	GPPS is shear sensitive so screen packs to be kept to minimum
Haul-off / Cooling	Water bath chilled 20c
Calibration	Suitable for use with a vacuum calibrator or sizing plates.
Mechanical Properties	
Shrinkages	0.3 to 0.6%
Flexural Strength	70 110 MPa
Tensile strength at Yield	36 - 46 MPa
Physical Properties	
Density	1.05
Cold Bend	N/A
Cold Flex	N/A
Elongation at Break	1 to 3%
Tensile Modulus	3 – 4 GPa
General Impact Strength	Poor
Material Finish	High clarity
Thermal Properties	
Vicat Softening Temperature	94c
Heat Deflection Temperature	80c
Flammability	
Flammability Rating	Not flame retardant
Weatherability	
Suitability for outdoor use	Not suitable prone to environmental stress cracking
Fillers & Additives	
	Lubrication
Chemical Resistance	
Resistant to	Water, alcohols, inorganic salts
Not resistant to	Oils, ethers, esters, acids
Food Contact Status	
	Suitable for contact with food
Colouring	
	Can be readily coloured by a range of techniques, for example, dry colouring and masterbatches. Dry colours are widely used with PS, and it is customary to add a binder (for example, liquid paraffin or a mineral oil) to stop separation.

REACH & ROHS Compliance	Contains no harmful substances
Bonding	May be bonded to itself by the use of solvents or by the use of solutions of GPPS in solvents. Bonded to other substrates by the use of impact adhesives.
Welding	Easily 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.