



KUMHO PS

Polystyrene

beyond
the best

KUMHO PETROCHEMICAL

KUMHO PS

PS is a representative thermoplastic resin polymerized by STYRENE MONOMER having high strength and excellent molding workability, so it is used in various ways from general household goods to home appliances. In general, depending on the presence or absence of impact modifier, it is divided into GPPS (General Purpose Polystyrene) and HIPS (High Impact Polystyrene). PS is the top five general purpose resins with PE, PP, PVC, and ABS. Unlike crystalline polymer such as PE and PP, it has a small mold shrinkage as amorphous polymer, so it has excellent dimensional stability and thermal resistance. And it is easy not only for injection/ extrusion molding but also for vacuum molding and foam molding. GPPS is a transparent resin polymerized using heat or catalysts as Styrene monomer alone, and has high strength, high transparency, and excellent electrical properties. The grades are classified according to fluidity, stiffness and thermal stability determined by molecular weight as important factor of physical properties. Kumho GPPS has high transparency, heat stability and low residual monomer contents and is suitable for injection/ extrusion molding, such as disposable supplies, small sized appliances, stationery and xps construction insulation. HIPS is a resin copolymerized polystyrene to the polybutadiene rubber, as impact modifier, to reinforce GPPS properties that is vulnerable to external impacts. Depending on the content and morphology of the Rubber, the molecular weight of PS matrix and additives, various characteristics such as impact strength, tensile strength, fluidity, appearance and chemical resistance are possible. KUMHO HIPS has a variety of grades that can be applied not only to general purpose but also for special purpose such as ESCR, depending on its wide range of melt flow index and impact strength. And it is suitable for secondary processing molding due to its excellent molding processability.



Application

GPPS (General Purpose PolyStyrene)

It is a highly transparent product applicable to a variety of applications due to excellent molding processability, dimensional stability, electrical properties, water resistance and non-toxicity. It has characteristics such as high fluidity, high rigidity and high heat resistance, and can be applied to disposable products, refrigerator shelves, stationery, and foam sheets.

HIPS (High Impact PolyStyrene)

It is a resin obtained by copolymerizing Polybutadiene Rubber to reinforce the impact strength, which is a disadvantage of GPPS, and has excellent impact strength and molding processability. It has characteristics for each grade, such as high impact, high gloss, and high flow, and is used in a variety of applications from general household goods to home appliances.

Flame Retardant HIPS

Kumho flame retardant PS has an excellent balance of physical properties and is especially excellent in impact resistance, fluidity, thermal stability and injection moldability. It is used in a variety of applications due to its excellent secondary processability such as painting and plating.

Physical properties

Grade	Characteristics	Applications	Tensile Strength	Flexural Strength	IZOD Impact Strength	Heat Distortion Temp.(°C)	Melt Flow Index	
			(kg/cm ²)	(kg/cm ²)	(kg·cm/cm)	Temp.(°C)	(g/10min)	
			23°C	23°C	3.2mm	18.6kg/cm ²	200°C, 5kg	
GPPS	GP 125	General Injection, High flow	430	580	1.5	82	9.0	
	E	General Extrusion, High flow	480	720	1.5	87	7.0	
	EB	Foaming Extrusion, High heat resistance	450	720	1.5	85	5.5	
	K	Injection/ Extrusion, High rigidity	520	900	1.5	92	3.0	
HIPS	GP 150	Injection, High rigidity	550	900	1.5	92	2.5	
	E	Extrusion, High rigidity	260	300	9.0	77	9.0	
	HI 425		General Injection	300	350	9.5	80	4.5
		E	General Extrusion	240	300	10.0	74	4.5
		EH	Extrusion, Vacuum foaming	230	300	10.0	79	3.5
		EP	ESCR (Environmental stress cracking resistance)	200	240	10.0	79	3.8
		ER		300	350	9.5	80	4.5
		TV	Injection, High rigidity	240	300	10.0	76	13.0
	TVL	Injection, High flow	350	500	11.0	82	4.0	
	HI 450	Injection, High impact/ gloss	180	240	10.0	79	3.8	
	HI 470	Refrigerator	250	380	8.0	75	9.0	
	MIB	Injection Blow Molding, High flow	250	350	9.0	74	7.5	
IT	Injection Blow Molding	260	330	9.0	75	9.0		
HFH407	High flame retardant	260	340	10.0	77	7.0		
HFH412	Low flame retardant							



GPPS



HIPS

