

## LG Chemical HIPS 405AF PS, Flame Retardant

Category : Polymer , Thermoplastic , Polystyrene (PS) , Polystyrene, Flame Retardant

### Material Notes:

Description: Injection Molding, PS, Flame Retardant  
 Application: Electric Parts Requiring Flame Retardancy  
 CAS: 9003-55-8, 158725-44-1 and 1309-64-4  
 Information provided by LG Chemical

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_LG-Chemical-HIPS-405AF-PS-Flame-Retardant.php](http://www.lookpolymers.com/polymer_LG-Chemical-HIPS-405AF-PS-Flame-Retardant.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.16 g/cc	1.16 g/cc	ASTM D792
Maximum Moisture Content	0.010	0.010	Injection Molding
Linear Mold Shrinkage, Flow	0.0040 - 0.0080 cm/cm @Thickness 3.20 mm	0.0040 - 0.0080 in/in @Thickness 0.126 in	ASTM D955
Melt Flow	15 g/10 min @Load 5.00 kg, Temperature 200 Å°C	15 g/10 min @Load 11.0 lb, Temperature 392 Å°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	90	90	ASTM D785
Tensile Strength, Yield	25.5 MPa @Thickness 3.20 mm	3700 psi @Thickness 0.126 in	50mm/min; ASTM D638
Elongation at Break	60 % @Thickness 3.20 mm	60 % @Thickness 0.126 in	50mm/min; ASTM D638
Elongation at Yield	>= 5.0 % @Thickness 3.20 mm	>= 5.0 % @Thickness 0.126 in	50mm/min; ASTM D638
Flexural Yield Strength	43.1 MPa @Thickness 3.20 mm	6260 psi @Thickness 0.126 in	15mm/min; ASTM D790
Flexural Modulus	2.16 GPa @Thickness 3.20 mm	313 ksi @Thickness 0.126 in	15mm/min; ASTM D790
Izod Impact, Notched	0.392 J/cm @Thickness 3.20 mm, Temperature -30.0 Å°C	0.735 ft-lb/in @Thickness 0.126 in, Temperature -22.0 Å°F	ASTM D256
	0.392 J/cm	0.735 ft-lb/in	ASTM D256

Mechanical Properties	Metric @Thickness 6.40 mm, Temperature -30.0 Â°C	English @Thickness 0.252 in, Temperature -22.0 Â°F	Comments
	0.785 J/cm	1.47 ft-lb/in	ASTM D256
	@Thickness 6.40 mm, Temperature 23.0 Â°C	@Thickness 0.252 in, Temperature 73.4 Â°F	
	0.981 J/cm	1.84 ft-lb/in	ASTM D256
	@Thickness 3.20 mm, Temperature 23.0 Â°C	@Thickness 0.126 in, Temperature 73.4 Â°F	

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	82.0 Â°C	180 Â°F	Unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	77.0 Â°C	171 Â°F	Unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	83.0 Â°C	181 Â°F	50Â°C/h; ASTM D1525
	@Load 5.00 kg	@Load 11.0 lb	
UL RTI, Electrical	50.0 Â°C	122 Â°F	
	@Thickness >=1.50 mm	@Thickness >=0.0591 in	
	50.0 Â°C	122 Â°F	
	@Thickness >=2.50 mm	@Thickness >=0.0984 in	
	50.0 Â°C	122 Â°F	
	@Thickness >=3.00 mm	@Thickness >=0.118 in	
UL RTI, Mechanical with Impact	50.0 Â°C	122 Â°F	
	@Thickness >=1.50 mm	@Thickness >=0.0591 in	
	50.0 Â°C	122 Â°F	
	@Thickness >=2.50 mm	@Thickness >=0.0984 in	
	50.0 Â°C	122 Â°F	
	@Thickness >=3.00 mm	@Thickness >=0.118 in	
UL RTI, Mechanical without Impact	50.0 Â°C	122 Â°F	
	@Thickness >=1.50 mm	@Thickness >=0.0591 in	
	50.0 Â°C	122 Â°F	

Thermal Properties	Metric	English	Comments
	@Thickness >=2.50 mm	@Thickness >=0.0984 in	
	50.0 Å°C	122 Å°F	
	@Thickness >=3.00 mm	@Thickness >=0.118 in	
Flammability, UL94	V-0	V-0	
	@Thickness >=1.50 mm	@Thickness >=0.0591 in	
	V-0	V-0	
	@Thickness >=2.50 mm	@Thickness >=0.0984 in	
	V-0	V-0	
	@Thickness >=3.00 mm	@Thickness >=0.118 in	

Electrical Properties	Metric	English	Comments
Arc Resistance	120 - 180 sec	120 - 180 sec	ASTM D495
Comparative Tracking Index	400 - 600 V	400 - 600 V	
Hot Wire Ignition, HWI	15 - 30 sec	15 - 30 sec	
	@Thickness >=1.50 mm	@Thickness >=0.0591 in	
	15 - 30 sec	15 - 30 sec	
	@Thickness >=2.50 mm	@Thickness >=0.0984 in	
	15 - 30 sec	15 - 30 sec	
	@Thickness >=3.00 mm	@Thickness >=0.118 in	
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	>= 120 arcs	>= 120 arcs	
	@Thickness 2.50 mm	@Thickness 0.0984 in	
	>= 120 arcs	>= 120 arcs	
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Voltage Arc-Tracking Rate, HVTR	10.0 - 25.4 mm/min	0.394 - 1.00 in/min	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	180 - 200 Å°C	356 - 392 Å°F	Injection Molding

Processing Properties	Metric	English	Comments
Middle Barrel Temperature	190 - 200 Å°C	374 - 392 Å°F	Injection Molding
Front Barrel Temperature	200 - 210 Å°C	392 - 410 Å°F	Injection Molding
Nozzle Temperature	200 - 230 Å°C	392 - 446 Å°F	Injection Molding
Melt Temperature	200 - 230 Å°C	392 - 446 Å°F	Injection Molding
Mold Temperature	40.0 - 60.0 Å°C	104 - 140 Å°F	Injection Molding
Drying Temperature	60.0 - 70.0 Å°C	140 - 158 Å°F	Injection Molding
Dry Time	3.00 - 4.00 hour	3.00 - 4.00 hour	Injection Molding
Back Pressure	29.4 - 58.8 MPa	4260 - 8530 psi	Injection Molding
Screw Speed	30 - 60 rpm	30 - 60 rpm	Injection Molding

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