

GELOY™ HRA222F resin

Acrylonitrile Styrene Acrylate + PC

SABIC Innovative Plastics Europe

Message:

GELOY HRA222F is a multi-purpose, chlorine and bromine free flame retardant PC+ASA alloy for injection molding processes. F1 rating according UL746C. Use for exterior/interior electrical applications requiring UV resistance.

General Information			
UL YellowCard	E121562-101287795	E121562-101287860	
Features	Chlorine Free		
	Good UV resistance		
	Bromine-free		
	Flame retardancy		
Uses	Electrical/Electronic Applications		
	Outdoor application		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.17	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (260°C/2.16 kg)	13.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow ¹	0.40 - 0.60	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.60	%	ISO 62
Equilibrium, 23°C, 50% RH	0.20	%	ISO 62
Outdoor Suitability	f1		UL 746C
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	2590	MPa	ASTM D638
--	2520	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	59.0	MPa	ASTM D638
Yield ⁴	63.0	MPa	ASTM D638
Yield	62.0	MPa	ISO 527-2/5
Yield	60.0	MPa	ISO 527-2/50
Fracture ⁵	66.0	MPa	ASTM D638
Fracture ⁶	56.0	MPa	ASTM D638
Fracture	51.0	MPa	ISO 527-2/5
Fracture	45.0	MPa	ISO 527-2/50
Tensile Elongation			

Yield ⁷	4.2	%	ASTM D638
Yield ⁸	4.3	%	ASTM D638
Yield	4.3	%	ISO 527-2/5
Yield	4.4	%	ISO 527-2/50
Fracture ⁹	> 100	%	ASTM D638
Fracture ¹⁰	> 100	%	ASTM D638
Fracture	> 50	%	ISO 527-2/5, ISO 527-2/50
Flexural Modulus ¹¹	2520	MPa	ISO 178
Flexural Stress	93.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹² (23°C)	15	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
0°C	290	J/m	ASTM D256
23°C	390	J/m	ASTM D256
-30°C ¹³	9.0	kJ/m ²	ISO 180/1A
0°C ¹⁴	12	kJ/m ²	ISO 180/1A
23°C ¹⁵	17	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature ¹⁶			
0.45 MPa, unannealed, 100 mm span	99.0	°C	ISO 75-2/Be
1.8 MPa, unannealed, 100 mm span	88.0	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	111	°C	ISO 306/A50
--	102	°C	ISO 306/B50
--	104	°C	ISO 306/B120
Ball Pressure Test (75°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -30 to 80°C	6.9E-5	cm/cm/°C	ISO 11359-2
Horizontal: -30 to 80°C	7.1E-5	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	7.5E-5	cm/cm/°C	ISO 11359-2
RTI Elec	90.0	°C	UL 746
RTI Imp	90.0	°C	UL 746
RTI	90.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Comparative Tracking Index (CTI)	PLC 0		UL 746
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (2.00 mm)	V-0		UL 94
Oxygen Index	29	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	80.0 - 90.0	°C	
Drying Time	2.0 - 4.0	hr	

Suggested Max Moisture	0.020	%
Hopper Temperature	60.0 - 80.0	°C
Rear Temperature	200 - 230	°C
Middle Temperature	220 - 260	°C
Front Temperature	230 - 270	°C
Nozzle Temperature	220 - 260	°C
Processing (Melt) Temp	230 - 270	°C
Mold Temperature	50.0 - 70.0	°C

NOTE

1.	Tensile Bar
2.	5.0 mm/min
3.	Type 1, 5.0 mm/min
4.	Type 1, 50mm/min
5.	Type 1, 5.0 mm/min
6.	Type 1, 50mm/min
7.	Type 1, 5.0 mm/min
8.	Type 1, 50mm/min
9.	Type 1, 5.0 mm/min
10.	Type 1, 50mm/min
11.	2.0 mm/min
12.	80*10*4 sp=62mm
13.	80*10*4
14.	80*10*4
15.	80*10*4
16.	120*10*4 mm

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