

GELOY™ HRA222F resin

Acrylonitrile Styrene Acrylate + PC
SABIC Innovative Plastics Europe

Message:

GELOY HRA222F is a multi-purpose, chlorine and bromine free flame retardant ASA-PC alloy for injection moulding processes. This grade has a F1 rating according UL746C. Typical properties as measured on natural material.

General Information			
UL YellowCard	E45329-100183332	E45329-462200	
Additive	Flame Retardant		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
	General Purpose		
Uses	General Purpose		
RoHS Compliance	RoHS Compliant		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density	1.17	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (260°C/2.16 kg)	13.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ¹	0.40 to 0.60	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	0.60	%	
Equilibrium, 23°C, 50% RH	0.20	%	
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
Break ⁵	66.0	MPa	ASTM D638
Break ⁶	56.0	MPa	ASTM D638
Break	51.0	MPa	ISO 527-2/5
Break	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
Break ⁹	> 100	%	ASTM D638
Break ¹⁰	> 100	%	ASTM D638
Break	> 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
CLTE			
Flow : -30 to 80°C	6.9E-5	cm/cm/°C	
Transverse : -30 to 80°C	7.1E-5	cm/cm/°C	
Transverse : 23 to 80°C	7.5E-5	cm/cm/°C	
Flammability	Nominal Value	Unit	Test Method
Flame Rating (2.00 mm, Testing by SABIC)	V-0		UL 94
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Oxygen Index	29	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	80.0 to 90.0	°C	
Drying Time	2.0 to 4.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	60.0 to 80.0	°C	
Rear Temperature	200 to 230	°C	
Middle Temperature	220 to 260	°C	
Front Temperature	230 to 270	°C	

Nozzle Temperature	220 to 260	°C
Processing (Melt) Temp	230 to 270	°C
Mold Temperature	50.0 to 70.0	°C

NOTE

1.	Tensile Bar
2.	5.0 mm/min
3.	Type I, 5.0 mm/min
4.	Type I, 50 mm/min
5.	Type I, 5.0 mm/min
6.	Type I, 50 mm/min
7.	Type I, 5.0 mm/min
8.	Type I, 50 mm/min
9.	Type I, 5.0 mm/min
10.	Type I, 50 mm/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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