



Geloy* Resin HRA222F

Europe-Africa-Middle East: COMMERCIAL

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.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	63	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	56	MPa	ASTM D 638
Tensile Stress, yld, Type I, 5 mm/min	59	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	66	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.3	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	>100	%	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4.2	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	>100	%	ASTM D 638
Tensile Modulus, 5 mm/min	2590	MPa	ASTM D 638
Tensile Stress, yield, 5 mm/min	62	MPa	ISO 527
Tensile Stress, break, 5 mm/min	51	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	60	MPa	ISO 527
Tensile Stress, break, 50 mm/min	45	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4.3	%	ISO 527
Tensile Strain, break, 5 mm/min	>50	%	ISO 527
Tensile Strain, yield, 50 mm/min	4.4	%	ISO 527
Tensile Strain, break, 50 mm/min	>50	%	ISO 527
Tensile Modulus, 1 mm/min	2520	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	93	MPa	ISO 178
Flexural Modulus, 2 mm/min	2510	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	385	J/m	ASTM D 256
Izod Impact, notched, 0°C	290	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	17	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	12	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m ²	ISO 180/1A

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.

3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

4) Own measurement according to UL.

Source, GMD, Last Update: 02/01/2005

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
IMPACT			
Izod Impact, notched 80*10*4 -30°C	9	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m ²	ISO 179/1eA
THERMAL			
CTE, -30°C to 80°C, flow	6.9E-05	1/°C	ISO 11359-2
CTE, -30°C to 80°C, xflow	7.1E-05	1/°C	ISO CD 11359-2
CTE, 23°C to 80°C, xflow	7.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	111	°C	ISO 306
Vicat Softening Temp, Rate B/50	102	°C	ISO 306
Vicat Softening Temp, Rate B/120	104	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	99	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	88	°C	ISO 75/Ae
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow (2)	0.4 - 0.6	%	GE Method
Density	1.17	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.6	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
Melt Volume Rate, MVR at 260°C/2.16 kg	13	cm ³ /10 min	ISO 1133
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating (3)(4)	2	mm	UL 94 by GE
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
UV-light, water exposure/immersion	F1	-	UL 746C

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	80 - 90	°C
Drying Time	2 - 4	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	230 - 270	°C
Nozzle Temperature	220 - 260	°C
Front - Zone 3 Temperature	230 - 270	°C
Middle - Zone 2 Temperature	220 - 260	°C
Rear - Zone 1 Temperature	200 - 230	°C
Hopper Temperature	60 - 80	°C
Mold Temperature	50 - 70	°C

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