
ELIX ABS HH 3105

High heat resistance ABS

ISO shortname: ISO 2580-1 ABS 1-M, MG, 105-15-16-20

Major Benefits

- . Excellent balance of impact strength and flowability
- . Super low emission grade
- . Lower mould deposits in injection molding processing applications
- . Better dimensional under heat

Chemical composition

Acrylonitrile-butadiene-styrene (ABS) copolymer modified with poly(styrene-co-maleimide) (SMI)

Physical form

White to slightly yellowish pellets.

Handling information

Please see the Material Safety Data Sheet for relevant health & safety information.

Typical properties

Property	Test Condition	Standard	Unit Value		Unit Value	
			SI Metrics		US Conventional	
Rheological properties						
Melt volume-flow rate	220°C, 10kg	ISO 1133	cm ³ /10min	16		
Melt flow rate	230°C, 3.8kg	ASTM D1238			g/10min	4
Molding shrinkage, parallel	60x60x2 mm	ISO 294-4	%	0.6-0.7		
Molding shrinkage, normal	60x60x2 mm	ISO 294-4	%	0.6-0.7		
Mechanical properties (23°C /50% H.R.)						
Yield stress	50 mm/min	ISO 527-1,2	MPa	42		
	5 mm/min	ASTM D 638	MPa	39	psi	5650
Elongation at break	50 mm/min	ISO 527-1,2	%	32		
	5 mm/min	ASTM D 638	%		%	32
Tensile modulus	1 mm/min	ISO 527-1,2	MPa	2150		
	5 mm/min	ASTM D 638			psi	312000
Flexural modulus	2 mm/min	ISO 178	MPa	2260		
	1.3 mm/min	ASTM D 790			psi	328000
Flexural strength	2 mm/min	ISO 178	MPa	66	psi	9550
Izod notched impact strength	23 °C (73°F)	ISO 180-1A	kJ/m ²	18	ft-lb/in ²	8.6
	-30 °C (-22°F)	ISO 180-1A	kJ/m ²	11	ft-lb/in ²	5.2
	73°F (23°C)	ASTM D 256 (3.2mm) 1/8"	J/m	240	ft-lb/in	4.5
	73°F (23°C)	ASTM D 256 (6.4mm) 1/4"	J/m	190	ft-lb/in	3.6
	-22°F (-30°C)	ASTM D 256 (3.2mm) 1/8"	J/m	140	ft-lb/in	2.6
Charpy notched impact strength	23 °C (73°F)	ISO 179-1eA	kJ/m ²	19	ft-lb/in ²	9.1
Ball indentation hardness		ISO 2039-1	N/mm ²	95		
Thermal properties						
Vicat softening temperature	B50;50°C/h	ISO 306	°C	103		
	50N;50°C/h	ASTM D 1525			°F	217
	B120;120°C/h	ISO 306	°C	105	°F	221
Deflection temperature under load*	1.80 MPa	ISO 75-1,2	°C	99	°F	210
Deflection temperature under load*	0.45 MPa	ISO 75-1,2	°C	104	°F	219
CLTE, parallel	23 to 55°C	ISO 11359 -1,2	10 ⁻⁴ /K	0.99		
Burning behavior UL 94	1.6 mm	UL 94	Class	HB		
Burning rate (US-FMVSS)	200x105x2mm	ISO 3795	mm/min	< 50	in/min	< 2
Other properties (23°C)						
Density	25°C	ISO 1183-1	g/cm ³	1.03	lb/in ³	0.037
Processing conditions for test specimens						
Injection molding-melt temperature		ISO 294	°C	240	°F	464
Injection molding-mold temperature		ISO 294	°C	70	°F	176
Injection molding-injection velocity		ISO 294	mm/s	240	in/s	9.5

*(annealed 4h/80°C; 4h/176°F)

Note: control measurements in other places may issue different results due to influences of machinery, equipment, test method or storage conditions.

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Test values

Unless specified to the contrary, the values given have been established on standardised test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mould/die, the processing conditions and the colouring.

Processing note

Under the recommended processing conditions small quantities of decomposition product may be given off during processing. To preclude any risk to the health and well-being of the machine operatives, tolerance limits for the work environment must be ensured by the provision of efficient exhaust ventilation and fresh air at the workplace in accordance with the Safety Data Sheet. In order to prevent the partial decomposition of the polymer and the generation of volatile decomposition products, the prescribed processing temperatures should not be substantially exceeded. Since excessively high temperatures are generally the result of operator error or defects in the heating system, special care and controls are essential in these areas.

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