ELIX ABS M205FC

Injection Moulding grade for medical applications (e.g. inhalers, roller clamps, spikes, etc.). Biocompatible with up to 30 days human contact duration according to USP Class VI and ISO 10993-1. Food contact acc. to BfR and FDA, DMF registered. Good flowing, standard impact strength.

Typical properties

Property	Test Condition	Standard	Unit	Value	Unit	Value
			SI Metrics		US Conventional	
Rheological properties						
Melt volume-flow rate	220 ºC, 10kg	ISO 1133	cm^3/10min	20		
Melt flow rate	230 ºC, 3.8kg	ASTM D1238			g/10min	10
Molding shrinkage, parallel	150x105x3, 500bar	ISO 294-4	%	0.5		
Molding shrinkage, normal	150x105x3, 500bar	ISO 294-4	%	0.5		
Mechanical properties (23ºC /50% H.R.)						
Yield stress	50 mm/min 5 mm/min	ISO 527-1,2 ASTM D 638	MPa MPa	50.5 47.5	 psi	 6900
Tensile stress at break	50 mm/min	ISO 527-1,2	MPa	36.5		
Yield strain	50 mm/min	ISO 527-1, -2	%	2.6		
Nominal strain at break	50 mm/min	ISO 527-1, -2	%	20		
Tensile strain at break	50 mm/min 5 mm/min	acc. ISO 527-1,2 ASTM D 638	%	>15	 %	 >15
Tensile modulus	1 mm/min 5 mm/min	ISO 527-1,2 ASTM D 638	MPa	2550	 psi	 348000
Flexural modulus	2 mm/min 1.3 mm/min	ISO 178 ASTM D 790	MPa	2600	 psi	 348000
Flexural strength	2 mm/min	ISO 178	MPa	75	psi	10000
Izod notched impact strength	23 ºC (73ºF)	ISO 180-1A	kJ/m^2	15	$ft\text{-}lb/in^2$	7.2
	-30 ºC (-22ºF)	ISO 180-1A	kJ/m^2	7	$ft\text{-}lb/in^2$	3.3
	73ºF (23ºC)	ASTM D 256 (3.2mm) 1/8"	J/m	200	ft-lb/in	3.7
	73ºF (23ºC)	ASTM D 256 (6.4mm) 1/4"	J/m	150	ft-lb/in	2.8
	-22ºF (-30ºC)	ASTM D 256 (3.2mm) 1/8"	J/m	105	ft-lb/in	2.0
Charpy impact strength	23 ºC (73ºF)	ISO 179-1eU	kJ/m^2	124	$ft\text{-}lb/in^2$	59.3
Charpy impact strength	-30 ºC (-22ºF)	ISO 179-1eU	kJ/m^2	100	$ft\text{-}lb/in^2$	47.8
Charpy notched impact strength	23 ºC (73ºF)	ISO 179-1eA	kJ/m^2	16	$ft\text{-}lb/in^2$	7.2
Charpy notched impact strength	-30 ºC (-22ºF)	ISO 179-1eA	kJ/m^2	7	$ft\text{-}lb/in^2$	3.3
Ball indentation hardness		ISO 2039-1	N/mm^2	106		
Thermal properties						
Vicat softening temperature	B50; 50ºC/h	ISO 306	ºC	98		
	50N; 50ºC/h	ASTM D 1525			ºF	210
	B120, 120ºC/h	ISO 306	ºC	101	ºF	214
Deflection temperature under load*	1.80 MPa	ISO 75-1,2	ºC	94	ºF	201
Deflection temperature under load*	0.45 MPa	ISO 75-1,2	ºC	98	ºF	208
CLTE, parallel	23 to 55ºC	ISO 11359 -1,2	10^{-4}/K	0.78		
CLTE, transverse	23 to 55ºC	ISO 11359 -1,2	10^{-4}/K	0.81		
Burning behavior UL 94	1.6 mm	UL 94	Class	HB		
Glow wire test (GWFI)	2.0 mm	IEC 60695-2-12	ºC	650		

Electrical properties (23 ºC/50 % r.h.)						
Relative permittivity	100 Hz	IEC 60250		3.04		
Relative permittivity	1 MHz	IEC 60250		2.82		
Dissipation factor	100 Hz	IEC 60250	10^{-4}	53		
Dissipation factor	1 MHz	IEC 60250	10^{-4}	96		
Volume resistivity		IEC 60093	Ohm·m	2E14		
Surface resistivity		IEC 60093	Ohm	2E17		
Other properties (23ºC)						
Density	25ºC	ISO 1183-1	g/cm^3	1.05	lb/in^3	0.0379
Processing conditions for test specimens						
Injection molding-melt temperature		ISO 294	ºC	240	ºF	464
Injection molding-mold temperature		ISO 294	ºC	70	ºF	158
Injection molding-injection velocity		ISO 294	mm/s	240	in/s	9.5

*(annealed 4h/80ºC; 4h/176ºF)

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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