LNP™ ELCRES™ AMS9085

DESCRIPTION

AMS9085 is a specially designed unreinforced polycarbonate copolymer compound that is very well suited for use as support material in 3D printing. Especially in combination with ULTEMTM resin 9085 but also with other high heat printing materials.

GENERAL INFORMATION	
Applications	Prototype
Features	Amorphous, Low Shrinkage, High stiffness/Strength, High temperature resistance, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Additive manufacturing, 3D printing, Fused Deposition Modeling (FDM) printing, Fibre and Filaments

INDUSTRY	SUB INDUSTRY
Industrial	Additive Manufacturing

TYPICAL PROPERTY VALUES

Revision 20240314

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	70	MPa	ISO 527
Tensile Stress, break, 50 mm/min	61	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Nominal Strain, break, 50 mm/min	80	%	ISO 527
Flexural Modulus, 2 mm/min	2400	MPa	ISO 178
Flexural Strength, 2 mm/min	104	MPa	ISO 178
Tensile Modulus, 50 mm/min	2200	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	70	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	62	MPa	ASTM D638
Tensile Nominal Strain, brk, Type I, 50 mm/min	65	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2500	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	104	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	137	kJ/m²	ISO 180/1U
Izod Impact, notched, 23°C	71	J/m	ASTM D256
Izod Impact, unnotched, 23°C	1690	J/m	ASTM D4812
THERMAL [1]			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	159	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	173	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	180	°C	ISO 306

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120	180	°C	ISO 306
CTE, 23°C to 50°C, flow	6.5E-5	1/°C	ISO 11359-2
CTE, 23°C to 50°C, xflow	6.5E-5	1/°C	ISO 11359-2
HDT, 1.82 MPa, 3.2mm, unannealed	157	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	172	°C	ASTM D648
Vicat Softening Temp, Rate B/50	180	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	180	°C	ASTM D1525
CTE, 23°C to 50°C, flow	6.5E-5	1/°C	ASTM E831
CTE, 23°C to 50°C, xflow	6.5E-5	1/°C	ASTM E831
PHYSICAL (1)			
Density	1.15	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.16	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.18	%	ISO 62-4
Water Absorption, (23°C/saturated)	0.35	%	ISO 62-1
Specific Gravity	0.15	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.18	%	ASTM D570
Water Absorption, (23°C/Saturated)	0.35	%	ASTM D570
INJECTION MOLDING (2)			
Drying Temperature	135	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.06	%	
Melt Temperature	320 – 340	°C	
Rear - Zone 1 Temperature	320 – 340	°C	
Middle - Zone 2 Temperature	320 – 340	°C	
Front - Zone 3 Temperature	310 – 330	°C	
Nozzle Temperature	300 – 320	°C	
Mold Temperature	120 – 140	°C	
Back Pressure	0.2 – 0.7	MPa	
EXTRUSION			
Drying Temperature	135	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 330	°C	
Nozzle Temperature	290 – 330	°C	
Barrel - Zone 3 Temperature	290 – 330	°C	
Barrel - Zone 2 Temperature	280 – 320	°C	
Barrel - Zone 1 Temperature	270 – 310	°C	
Die Temperature	110 – 130	°C	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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