AquaSys® 120

TECHNICAL DATA SHEET

AquaSys® 120 Soluble Support for Additive Manufacturing

Rev 3: 9/8/23

FEATURE	ADVANTAGE	BENEFIT
Temperature Resistance	Stable with build chamber temperatures of up to 120 ºC.	Compatible with several engineering thermoplastics including: PETG, CPE, ABS, Nylon, PC, PC/ABS, TPU, PP and various filled materials.
Water Soluble	Rapidly dissolves in standard tap water at temperatures of 70-80 ºC.	No additional chemicals or custom dissolution baths are required.
Adhesion	AquaSys 120 has excellent adhesion to a variety of build materials and build plates including PETG, CPE, Nylon, ABS, TPU, PC, PP and various filled materials.	Allows the production of more uniform parts with fewer defects.
Shrinkage	Very low shrinkage.	Support does not curl during printing.
Shelf Life	If properly stored, AquaSys 120 does not pick up significant moisture.	No unique handling or drying is required if properly stored and kept dry. Drying is required at 70-80°C if material picks up moisture.

PHYSICAL PROPERTIES		UNITS	METHOD
24 hour moisture absorption	0.3%	@ 50% RH and 25 ºC	ASTM D792
Specific Gravity	1.32	g/cm3	ASTM D792
Dissolution Rate @ 80 ºC in water	15 min to dissolve 1cm cube		

INJECTED MOLDED PARTS MECHANICAL PROPERTIES		UNITS	METHOD
Tensile Strength	16,000	PSI	ASTM D638
Tensile Modulus	1,100,000	PSI	ASTM D638
Elongation @ Break	1.7	%	ASTM D638
Flexural Strength	33,000	PSI	ASTM D790
Flexural Modulus	1,100,000	PSI	ASTM D790
Izod Impact Notched	0.45	ft-lbf/in	ASTM D256
Izod Impact Unnotched	4.3	ft-lbf/in	ASTM D4812

PRINTED PARTS MECHANICAL PROPERTIES		UNITS	METHOD
Tensile Strength	4,300	PSI	ASTM D638
Tensile Modulus	1,100,000	PSI	ASTM D638
Elongation @ Break	0.40	%	ASTM D638
Flexural Strength	16,000	PSI	ASTM D790
Flexural Modulus	910,000	PSI	ASTM D790
Izod Impact Notched	1.2	ft-lbf/in	ASTM D256
Izod Impact Unnotched	2.4	ft-lbf/in	ASTM D4812

PRINTED SPECIMEN CONDITIONS	
System Used	Open Source FGF/DPE – Tumaker NX Pro
Nozzle	0.8mm
Layer Height	0.4mm
Infill	100% Rectilinear 45º
Speed	20mm/s
Build Orientation	XY Flat

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THERMAL PROPERTIES	
Melt Flow Index at 230C; 5 kg g/10 minutes	7
Glass Transition Temperature	90ºC
Melting Temperature	180ºC
MATERIAL SPECIFICATIONS	
Standard Product Forms: 3 mm pellet, 1.75 mm and 2.85 mm filament	
Color is natural amber color	
Intentionally formulated using environmentally safe materials	
Typical printing temperatures	
RECOMMENDED PRINT SETTINGS	
Extruder Inlet Temperature	220-260ºC
Extruder Outlet Temperature	230-280ºC
Chamber Temperature	Ambient to 120ºC
Build Plate Temperature	50 to 120ºC
Build Plate Material	Glass, PEI
Build Plate Adhesive	Optional
Nozzle Size (mm)	0.8
Layer Height (mm)	0.4
Print Speed (mm/s)	10-40
Solubility	Soluble in Tap Water 50-80ºC with Agitation
Feedstock Drying Conditions (Optional)	70ºC for 3-4 hours
GENERAL INSTALLATION, USAGE, AND CARE OVERVIEW	
Storage and Preparation: Store AquaSys 120 in metallized foil packaging with desiccant. Reseal after use.	

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