AquaSys® GP

TECHNICAL DATA SHEET

AquaSys® GP Soluble Support for Additive Manufacturing

Rev 2: 9/8/23

FEATURE	ADVANTAGE	BENEFIT
Temperature Resistance	Stable with build chamber temperature up to 30 °C and prints well at room temp.	Compatible with several thermoplastics including: PLA, PETG
Water Soluble	Rapidly dissolves in standard tap water at 25 °C.	No additional chemicals/custom dissolution baths are required.
Adhesion	AquaSys GP has excellent adhesion to a variety of build materials and build plates including glass, PC-ABS, PEI.	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 GP does not pick up significant moisture	No unique handling or drying is required if properly stored and kept dry. Drying is required at 40-50 °C if material picks up moisture.

PHYSICAL PROPERTIES		UNITS	METHOD
24 hour moisture absorption	0.3-0.5%	@ 50% RH and 25 °C	ASTM D792
Specific Gravity	1.27	g/cm^3	ASTM D792
Coefficient Thermal Expansion	4.01E-05	in/in°C	ASTM D696
INJECTION MOLDED MECHANICAL PROPERTIES		**UNITS**	**METHOD**
Tensile Modulus	875,000	psi	ASTM D638
Tensile Strength	13,000	psi	ASTM D638
Tensile Elongation @ Break	2	%	ASTM D638
Flexural Modulus	850,000	psi	ASTM D790
Flexural Strength	25,000	psi	ASTM D790
IZOD Impact Unnotched	7.9	ft-lbf/in	ASTM D256
IZOD Impact Notched	0.25	ft-lbf/in	ASTM D4812
Heat Deflection Temperature (0.45 Mpa)	57	°C	ASTM D648
Vicat Softening (10.0N)	71.5	°C	ASTM D1525
PRINTED PARTS MECHANICAL PROPERTIES		**UNITS**	**METHOD**
Tensile Modulus	1,050,000	psi	ASTM D638
Tensile Strength	6,200	psi	ASTM D638
Tensile Elongation @ Break	0.75	%	ASTM D638
Flexural Modulus	600,000	psi	ASTM D790
Flexural Strength	8,600	psi	ASTM D790
IZOD Impact Unnotched	2.5	ft-lbf/in	ASTM D256
IZOD Impact Notched	0.32	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 45°
Speed	40mm/s
Build Orientation	XY Flat

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THERMAL PROPERTIES	
Melt Flow Index at 230C; 5 kg g/10 minutes	45
Glass Transition Temperature	55°C
Melting Temperature	170°C
RECOMMENDED PRINT SETTINGS	
Extruder Inlet Temperature	150-175°C
Extruder Outlet Temperature	225-280°C
Chamber Temperature	Ambient
Build Plate Temperature	Ambient to 60°C
Build Plate Material	Glass, PEI
Build Plate Adhesive	Optional
Nozzle Size (mm)	0.8
Layer Height (mm)	0.4
Print Speed (mm/s)	30-60
Solubility	Soluble in Room Temperature Tap Water
Feedstock Drying Conditions (Optional)	50°C for 3-4 hours
MATERIAL SPECIFICATIONS	
Standard Product Forms: pellet; 1.75 mm and 2.85 mm filament	
Color is translucent off white	
Intentionally formulated using environmentally safe materials	
GENERAL INSTALLATION, USAGE, AND CARE OVERVIEW	
Storage and Preparation: Store AquaSys GP in metallized foil packaging with desiccant. Reseal after use.	
See SDS for material handling.	

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