

TECHNICAL DATA SHEET

AquaSys® 18O Soluble Support for Additive Manufacturing

Rev 1: 8/21/20

Introducing High Temperature Water Dispersible Support

AguaSys 18O is a high temperature water dispersible thermoplastic material to be extruded, injection molded, or 3D printed.

Resin Water Soluble Copolymer Filler Carbohydrate and Polyamide Fill level 0-100% Uses Extrusion, Injection Molding, 3D Printing Form Pellets or Filament (1.75mm or 2.85mm) PHYSICAL PROPERTIES TYPICAL VALUE UNITS METHOI Specific Gravity 1.26 ASTM D65 MECHANICAL PROPERTIES UNITS METHOI Melt Flow Index (260 °C; 5kg) 15.5 g/10min ASTM D65 Modulus 983,000 psi Strength 18,000 psi Elongation @ Break 2.8 % Flexural ASTM D75 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 /1 Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D66				
Filler Carbohydrate and Polyamide Fill level 0-100% Uses Extrusion, Injection Molding, 3D Printing Form Pellets or Filament (1.75mm or 2.85mm) PHYSICAL PROPERTIES TYPICAL VALUE UNITS METHOD Specific Gravity 1.26 ASTM D63 ASTM D63 MECHANICAL PROPERTIES UNITS METHOD METHOD Melt Flow Index (260 °C; 5kg) 15.5 g/10min ASTM D63 Modulus 983,000 psi STM D63 Modulus 983,000 psi STM D75 Strength 18,000 psi STM D75 Modulus 872,000 psi STM D75 Unnotched 10.3 ft-Ibb/in STM D75 Impact (IZOD) ASTM D75 ASTM D75 ASTM D75 Unnotched 10.3 ft-Ibb/in <t< th=""><th>GENERAL INFORMATION</th><th></th><th></th><th></th></t<>	GENERAL INFORMATION			
Uses	Resin	Water Soluble Copolymer		
Dises	Filler	Carbohydrate and Polyamide		
Pellets or Filament (1.75mm or 2.85mm) PHYSICAL PROPERTIES TYPICAL VALUE UNITS METHOD	Fill level	0-100%		
PHYSICAL PROPERTIES TYPICAL VALUE UNITS METHOI	Uses	Extrusion, Injection Molding, 3D Printing		
Specific Gravity	Form	Pellets or Filament (1.75mm or 2.85mm)		
Coefficient Thermal Expansion 4.2E-05 in/in°C ASTM D69 MECHANICAL PROPERTIES UNITS METHOI Melt Flow Index (260 °C; 5kg) 15.5 g/10min ASTM D12 Tensile ASTM D63 Modulus 983,000 psi Strength 18,000 psi Elongation @ Break 2.8 % Flexural ASTM D79 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / I Unnotched 10.3 ft-Ibb/in Notched 0.4 ft-Ibb/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D15 RECOMMENDED DRYING CONDITIONS COMMENDED MOLDING CONDITIONS COMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	PHYSICAL PROPERTIES	TYPICAL VALUE	UNITS	METHOD
MECHANICAL PROPERTIES UNITS METHOD Melt Flow Index (260 °C; 5kg) 15.5 g/10min ASTM D12 Tensile ASTM D63 Modulus 983,000 psi Strength 18,000 psi Elongation @ Break 2.8 % Flexural ASTM D75 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / Instruction of the properties of the prope	Specific Gravity	1.26		ASTM D792
Melt Flow Index (260 °C; 5kg) 15.5 g/10min ASTM D12: Tensile ASTM D63 Modulus 983,000 psi Strength 18,000 psi Elongation @ Break 2.8 % Flexural ASTM D79 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / Instruction of the properties of the psi Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D15 RECOMMENDED DRYING CONDITIONS STRECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Coefficient Thermal Expansion	4.2E-05	in/in°C	ASTM D696
Tensile ASTM D63 Modulus 983,000 psi Strength 18,000 psi Elongation @ Break 2.8 % Flexural ASTM D79 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / Impact (IZOD) Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D15 RECOMMENDED DRYING CONDITIONS RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	MECHANICAL PROPERTIES		UNITS	METHOD
Modulus 983,000 psi Strength 18,000 psi Elongation @ Break 2.8 % ASTM D79 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / Impact (IZOD) Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D62 Vicat Softening (10.0N) 171 °C ASTM D152 RECOMMENDED DRYING CONDITIONS CONDITIONS CONDITIONS Barrel temperatures 390 - 435 °F CONDITIONS Mold temperatures 100 - 130 °F CONDITIONS	Melt Flow Index (260 °C; 5kg)	15.5	g/10min	ASTM D1238
Strength 18,000 psi Elongation @ Break 2.8 % Flexural ASTM D79 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / 1 Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D15 RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Tensile			ASTM D638
Elongation @ Break 2.8	Modulus	983,000	psi	
Flexural ASTM D79 Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / Impact (IZOD) Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D62 Vicat Softening (10.0N) 171 °C ASTM D152 RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Strength	18,000	psi	
Modulus 872,000 psi Strength 28,700 psi Impact (IZOD) ASTM D256 / Impact (IZOD) Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D15 RECOMMENDED DRYING CONDITIONS C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Elongation @ Break	2.8	%	
Strength 28,700 psi Impact (IZOD) ASTM D256 / Impact (IZOD) Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D153 RECOMMENDED DRYING CONDITIONS RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Flexural			ASTM D790
Impact (IZOD)	Modulus	872,000	psi	
Unnotched 10.3 ft-lbf/in Notched 0.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D62 Vicat Softening (10.0N) 171 °C ASTM D152 RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Strength	28,700	psi	
Notched O.4 ft-lbf/in Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D152 RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Impact (IZOD)			ASTM D256 / D4812
Heat Deflection Temperature (0.45 Mpa) 70 °C ASTM D64 Vicat Softening (10.0N) 171 °C ASTM D155 RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Unnotched	10.3	ft-lbf/in	
Vicat Softening (10.0N) 171 °C ASTM D152 RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Notched	0.4	ft-lbf/in	
RECOMMENDED DRYING CONDITIONS Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	Heat Deflection Temperature (0.45 Mpa)	70	°C	ASTM D648
Oven dry for at least 4-6 hours at 85 °C RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 – 435 °F Mold temperatures 100 – 130 °F	Vicat Softening (10.0N)	171	°C	ASTM D1525
RECOMMENDED MOLDING CONDITIONS Barrel temperatures 390 - 435 °F Mold temperatures 100 - 130 °F	RECOMMENDED DRYING CONDITION	IS		
Barrel temperatures 390 – 435 °F Mold temperatures 100 – 130 °F	Oven dry for at least 4-6 hours at 85 °C			
Mold temperatures 100 – 130 °F	RECOMMENDED MOLDING CONDITION	DNS		
·	Barrel temperatures	390 – 435 °F		
STORAGE AND PACKAGING	Mold temperatures	100 – 130 °F		
	STORAGE AND PACKAGING			

Store AquaSys 180 in metallized foil packaging with desiccant. Reseal after use.

See MSDS/SDS for material handling.

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, Infinite Material Solutions, LLC. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN.

The information provided herein relates only to the specific product described and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Infinite Material Solutions™ | 1091 Sutherland Ave. | River Falls, WI 54022 | 1 (347) 487-8880 | aquasys@weareinfinite.tech