

# HYDROSOLUBLE

## TECHNICAL DATA SHEET VERSION 1.1



**INNOVATEFIL®**  
*by smart materials 3D*

Innovatefil® Hydrosoluble is a water-soluble support filament suitable for multi-head 3D printers. It is compatible with a wide range of materials for 3D printing and it is easy to print, allowing you to make pieces with complicated geometries and it can be used as support in completely inaccessible places for later removal.

	UNITS	TIPICAL VALUE
PHYSICAL PROPERTIES		
Chemical Composition	BVOH (Butenediol alcohol co-polymer)	
Material Density	g/cm <sup>3</sup>	1.13
Solubility	Soluble in water	

PRINTING PROPERTIES		
Print Temperature	°C	190-220
Bed Temperature	°C	80-100
Print Speed	mm/s	40-60
Fan layer	%	0-40

### ADVANTAGES

#### EASY TO ELIMINATE.

Dissolves quickly in water, eliminating the support material very easily.

#### ALTERNATIVE TO HIPS AND PVA

It is compatible with a lot of materials (PLA, ABS, NYLON, PETG) that it why it is an alternative to HIPS.

#### GREAT THERMAL STABILITY

Unlike PVA filaments, HYDROSOLUBLE has a great thermal stability, this allows making supports with great definition and accuracy. Besides having a lower flow index, drip is eliminated in the nozzle, avoiding stains in the piece in the extruder change.

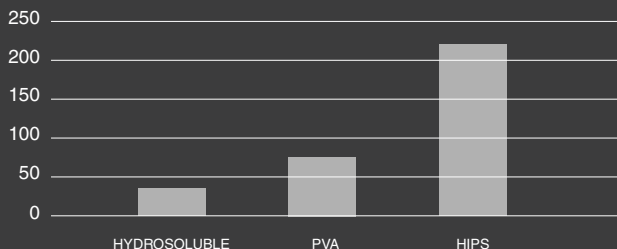
#### LESS ABSORPTION OF MOISTURE

Comparing HYDROSOLUBLE with PVA, it has a lower level of moisture absorption, this makes it to last longer that PVA in time and it does not increase its diameter due to the humidity.

### COMPARISON OF DISSOLUTION TIMES

TEST PIECE  
40 x 30 x 3 mm

DISSOLVIN TIME (min)



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## USE RECOMENDATIONS

### OPTIMIZE BED TEMPERATURE ACCORDING TO MATERIAL

For materials such as PLA, we recommend to use a bed temperature lower than the indicated so PLA does not deform due to excess of temperature and still maintains its adherence.

### PROTECT FROM HUMIDITY

Innovatefil® Hydrosoluble dissolves in water that its why it must be protected and kept in a dry environment to avoid moisture and water absorption.

The filament is pack in a vacuum bag with a great barrier against moisture to make sure it cannot absorb humidity. This bag closes with an automatic zip including a strong desiccant bag with great absorption power, so we strongly recommend to keep the filament inside it for protection.

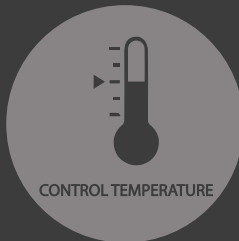
We recommend not to manipulate the filament with wet hands to avoid degradation.

### PURGE THE MATERIAL ONCE USED.

We advise to purge the extruder to eliminate remaining material inside. Due to the nature of the material when subjected to an excess of temperature during a prolonged time, it degrades and crystallizes solidifying inside the extruder, this can cause seals.

### WASTE DISPOSAL

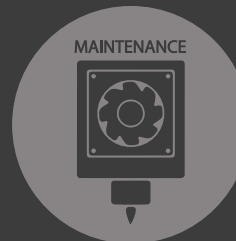
HYDROSOLUBLE is a biodegradable product, follow local and national regulations on plastic waste disposal



CONTROL TEMPERATURE



MOISTURE PROTECT



MAINTENANCE



BIODEGRADABLE

**DISCLAIMER:** The information provided in the data sheets is intended to be just a reference. It should not be used as design or quality control values. Actual values may differ significantly depending on the printing conditions. The final performance of the printed components does not only depend on the materials, also the design and printing conditions are important.

Smart Materials assumes no responsibility for any damage, injury or loss produced by the use of its filaments in any particular application.