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TECHNICAL DATA SHEET

S-PAHT

Quick-Remove Support Material

BRIEF INTRODUCTION

S-PAHT Quick-Remove Support Material can achieve fast and easy peeling by adjusting the bonding strength to the support surface of the body material and the bonding strength of S-PAHT itself. S-PAHT does not require the use of water or solvents during the removal of the support and does not produce water pollution, which is safe and environmentally friendly. It can be used in dual print head FDM printers or 2-in/1-out FDM printers.
Compatible with PAHT/PAHT-CF and PAHT-GF materials

CHARACTERISTIC

Smart Adhesion Technology

S-PAHT can provide a moderate bond strength to the body material through formulation and process modifications, which ensures that the body material can be molded to the support surface and can be easily separated from the support surface of the body material during removal of the support.

Quick Remove Technology

S-PAHT has dramatically reduced its own inter-layer bond strength through formulation and process modifications, and can be easily teared apart during removal process.

ECO Friendly

S-PAHT does not require the use of water or solvents during the use process, does not produce water pollution, and is safe and environmentally friendly.

IDENTFICATION OF THE MATERIAL	
Trade name	S-PAHT
Application	3D PRINTING
GUIDELINE FOR PRINT SETTINGS	
Nozzle Temperature	280-290℃
Recommended Nozzle Diameter	0.4-1.0mm
Recommended build surface treatment	Coating with PVP glue
Build plate temperature	60-80℃
Raft separation distance	0 mm
Recommended Support Infill Ratio	15%-20%
Recommended Dense Support Layers	3-5
Vertical Offset Top/Down Layers	0
Horizontal offset	0.3-0.6 mm
Support infill outlines	0-1
Cooling fan speed	off or 20%
Print speed	30-120 mm/s
Retraction distance	3-6 mm
Retraction speed	1800-3600 mm/min
Suitable materials	PAHT PAHT-GF PAHT-CF

Settings are based on a 0.6mm nozzle.Nozzle temp.320℃,Bed temp.:80℃， Printing speed:45mm/s,filling rate:100%,filling angle:+/-45° Annealing conditions:100℃ 8hrs.

MATERIAL PROPERTIES	Test Method	Typical value
Density	ISO 1183	1.20 g/cm³
Water absorption	ISO 62: Method 1	0.4%
Melting Temperature	ISO 11357	218℃
Melt index	280℃, 2.16kg	11

Other Suggestions：

1.S-PAHT very easy to absorb moisture within the environment, and printing after absorbing moisture will result ozzing, extruding with bubbles and rough surface appearance, thus reducing print quality. It is recommended that put the filament into a dry box (humidity below 15%) immediately after opening the S-PAHT vacuum bag for printing.

2.After the material is damp, there will be more printing ozzing, bubbles extruded and rough printing surface. Please dry the filament in an oven at 80-100℃ for 4-6h to restore the printing quality of S-PAHT.

3.It is recommended to use hardened steel and above grade nozzles, which can effectively improve the print quality. Besides, it is recommended that the thickness of the heating block is longer 12mm.

4.In dual-extruder printing mode, the material in the standby nozzle will deteriorate due to prolonged heating, and the deteriorated material needs to be squeezed out before the print nozzle is switched, so it is necessary to use the Wipe wall or Wipe tower function in the slicing software.

5. After the printing is completed, the printed part can be annealed and then the S-PAHT removal step can be performed. During the annealing process, S-PAHT can play the role of supporting the body material, reducing the dimensional deformation of the body material and improving the mechanical properties of the body material. Annealing conditions: set according to the requirements of the body material.

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