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TECHNICAL DATA SHEET

PLA Aero

BRIEF INTRODUCTION

PLA-Aero is a type of lightweight 3D printing material specially developed for aeromodelling , ship model, drone and other fields. PLA-Aero controls the foaming ratio of the material by adjusting the temperature during the printing process so that the density of the material extruded by the nozzle can be adjusted within a certain range. With this technique, it is easy to reduce the weight of the model. In the best-case scenario, the model weight can be reduced to 50% of a model printed with ordinary PLA. In addition to that, the matte texture of the printed surface can reduce the visibility of printed layers and thus give a smooth surface finish.

CHARACTERISTIC

On-Demand Foaming Technology

PLA-Aero is a PLA filament that will start foaming with the aid of a blowing agent during the printing process. The blowing agent is in an unexcited state in the PLA filament before printing. During the printing process，by adjusting the printing temperature, the foaming ratio of the blowing agent can be easily controlled. The maximum foaming ratio can reach 200%

IDENTFICATION OF THE MATERIAL	
Trade name	PLA-Aero
Application	3D PRINTING

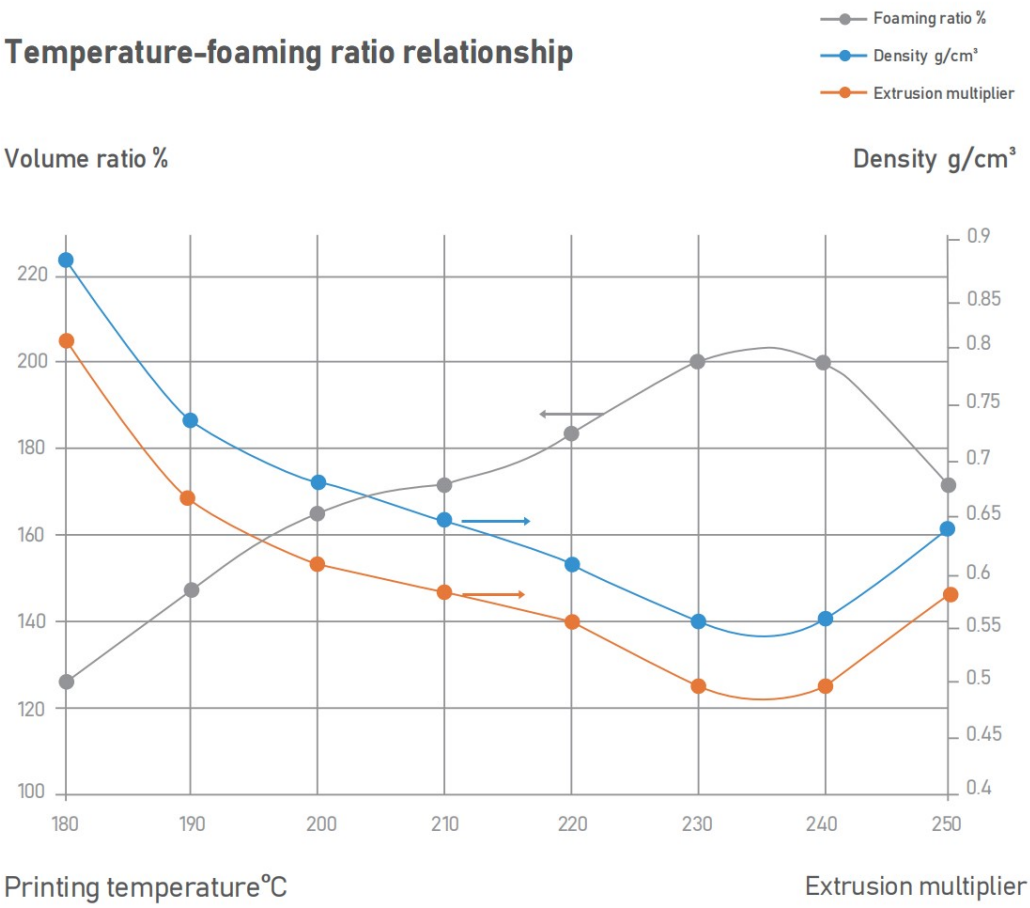
GUIDELINE FOR PRINT SETTINGS	
Nozzle temperature	180-250℃
Optimum foaming temperature	230℃
Bed Temperature	50℃
Bed material	Glass/PEI Film/PC Film or plate applied with PVP glue
Active cooling fan	ON
Recommend nozzle size	0.2mm
Raft distance	0mm
Print speed	30-90mm/s

Settings are based on a 0.4mm nozzle.Nozzle temp.230℃,Bed temp.:50℃，Printing speed:45mm/s,filling rate:100%,filling angle:+/-45°

MATERIAL PROPERTIES	Typical value	Test Method
Melt index	10g/10min	250℃ 2.16kg
Glass-transition temperature	60℃	ISO11357
Vicat softening temperature	65℃	ISO306
Density	1.1g/cm^3	ISO 1183
Tensile breaking strength(X-Y)	10.76+/-1.19 MPa	ISO527
Young modulus	893+/-18MPa	ISO527
Elongation at break 100%（X-Y）	16.87+/-2.11%	ISO527
Tensile yield strength	1.37+/-0.08Mpa	ISO527
Elongation at Yield	2.06+/-0.04Mpa	ISO527
Charpy impact strength	2.64+/-0.19KJ/m^2	ISO179

Other Suggestions:

Since PLA-Aero adopts the "On-Demand foaming" technology, the filament will continue to expand in the nozzle after being heated during the printing process. Therefore, it will cause unavoidable stringing during the nozzle movement. Even adjusting the retraction setting in the slicing software cannot solve this problem. Based on the above, it is recommended to turn off the retraction setting. The string on the surface of models can easily be removed by hand.



Suzhou Melovy Technology CO., Ltd

NO.68, Nantiancheng Road, Xiangcheng Dist.

Suzhou City, Jiangsu Prov. China

Tel: +86-0-512-6580-8834

Email:info@melovy3d.com

Website: www.melovy3d.com