



PARTNER OF



PRESENT

KEYTECH 3D PRINTING FILAMENT

Rev. 0



KEYTECH 3D PRINTING FILAMENT

Introduction

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KEYTECH 3D PRINTING FILAMENT

Description of Present Situations

FFF (fused filament fabrication) is an additive manufacturing technology. A fused filament fabrication tool deposits a filament of a material (such as plastic, wax, or metal) on top or alongside the same material, making a joint (by heat or adhesion).

Fused Filament Fabrication is equivalent to Fused Deposition Modeling. However, the term fused deposition modeling and its abbreviation to FDM are trademarked by Stratasys Inc. The term fused filament fabrication (FFF), was coined by the members of the RepRap project to provide a phrase that would be legally unconstrained in its use.

Objects printed with FFF are layered, so they have a grain like wood. Even when printed with an infill rate of 100%, such objects are not quite as strong (in some directions) as others. Tests show that printing the same object in different orientations, with different infill patterns, can give differences in strength of almost 2 to 1. An interlocking infill pattern seems to give more strength. For more information, see the sources listed in Further Reading.

From: http://reprap.org/wiki/Fused_filament_fabrication

FDM uses the thermoplastics ABS, PLA, PA, WOOD, CLEAR POLYMERS, AND RUBBER, major polymers used are PLA and ABS. For technical polymer with high mechanical and thermal characteristic are used ABS, PA and few special PLA. ABS and PA request hot bed and aren't easy to print like Standard PLA.



KEYTECH 3D PRINTING FILAMENT

Description of KEYTECH 3D PRINTING FILAMENT

Keytech 3D Printing filaments are made with high special polymers, mostly never use in 3D Printing till today.

These filament are made with high thermal and mechanical characteristics.

Particular attention are PolyKey PLA HS and PolyKey PLA HS NX who have a similar thermal and mechanical characteristics of ABS and PA but are possible and easy to print like PLA.

Others new polymers are PP (Polypropylene) Special Compound with high thermal and mechanical characteristics better of ABS and PA, aren't biopolymers and in meantime have also very low moisture absorption and will be to print similar PLA.

On the next page you can see a best values and points of Keytech 3D Printing Filament.

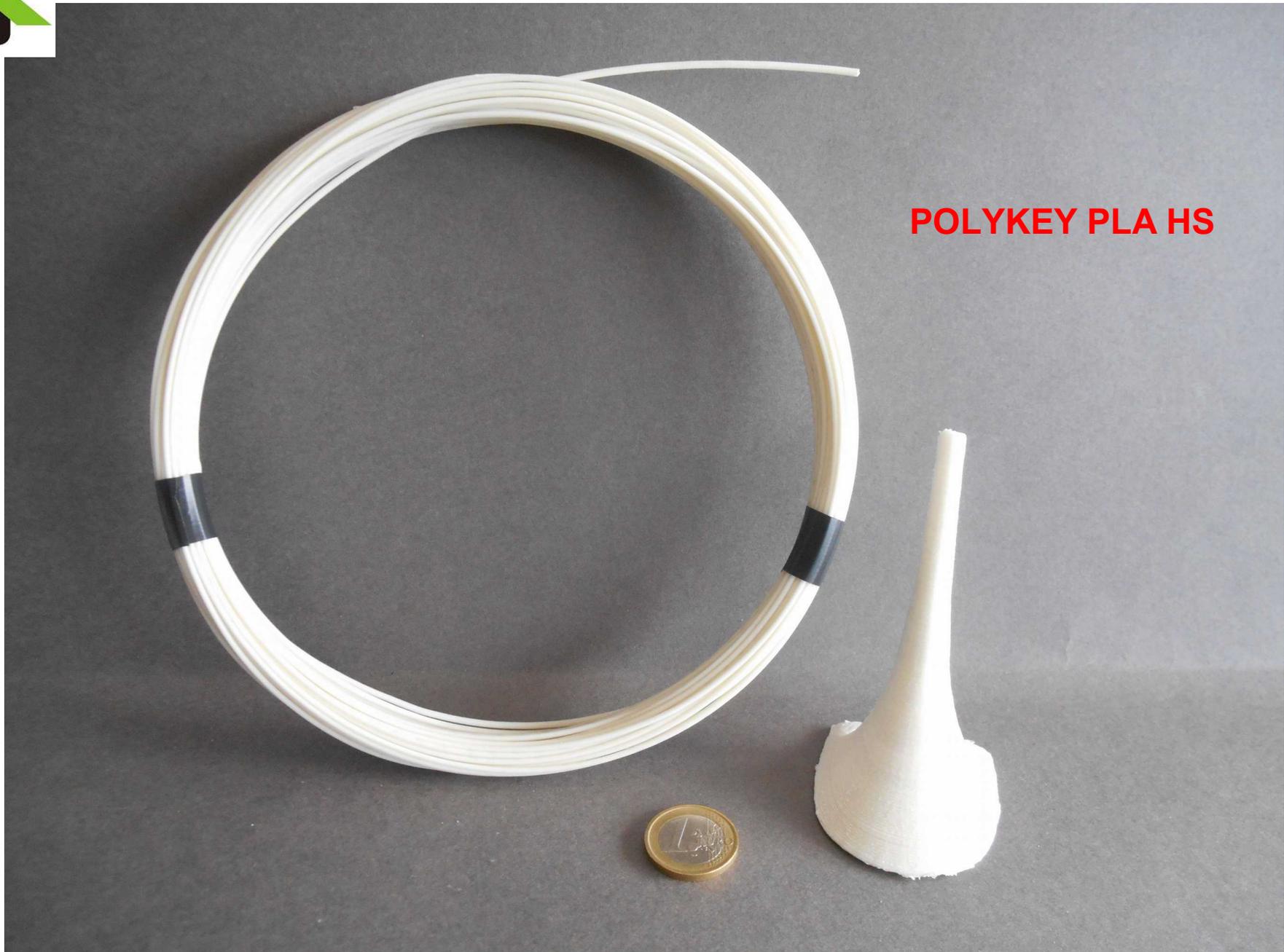


KEYTECH 3D PRINTING FILAMENT

Images and Technical data



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POLYKEY PLA HS



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POLYKEY PPMF



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POLYKEY PPGF



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PA 6 30 GF V0

UL 94 YELLOW CARD



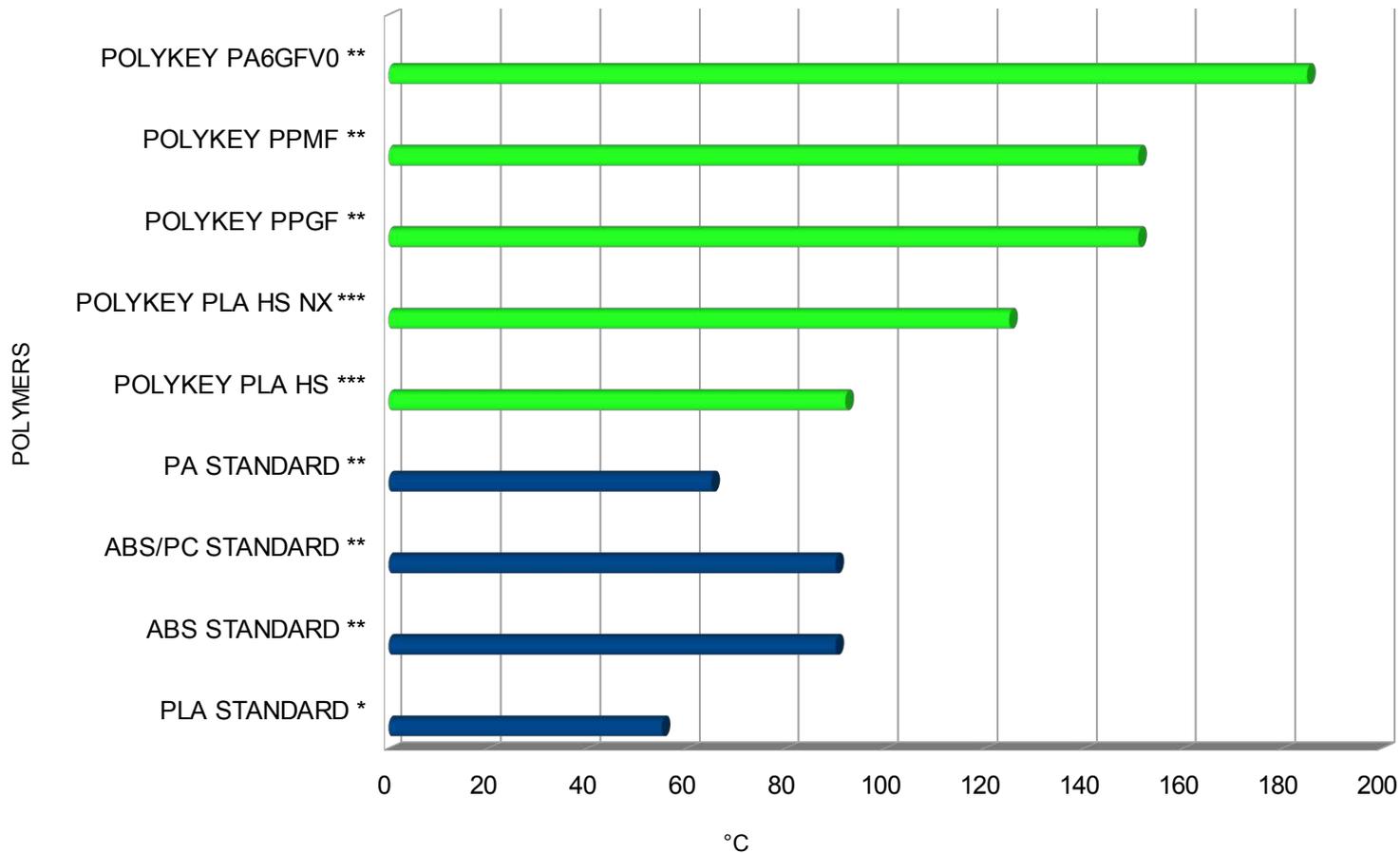


KEYTECH 3D PRINTING FILAMENT

HDT HEAT DEFLECTION TEMPERATURES (1,82 MPa)

<http://www.intertek.com/polymers/testlopedia/heat-deflection-temperature-astm-d648/>

*E 2092 - ** ASTM D 648 - *** ISO 75

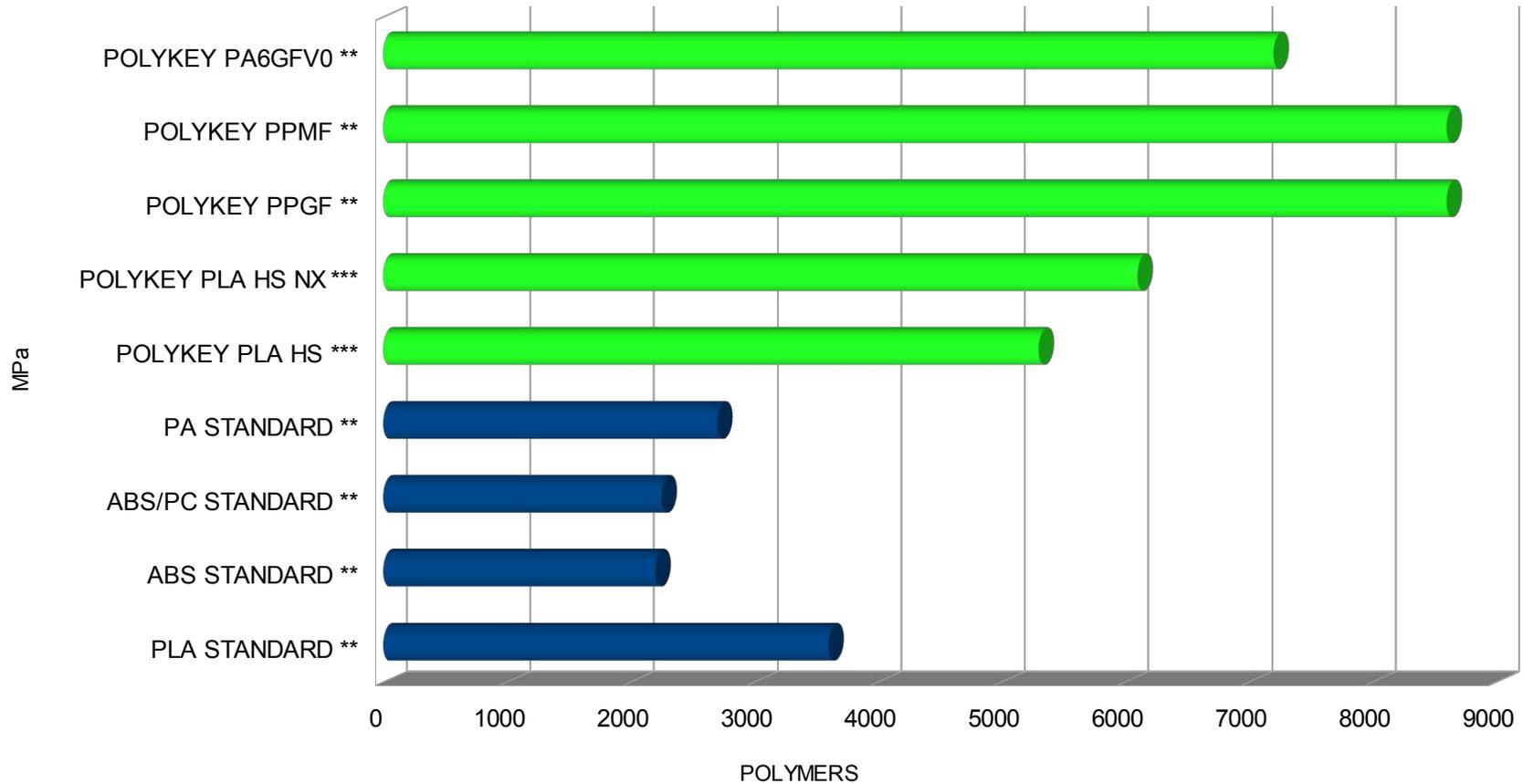




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FLEXURAL MODULUS (MPa)

** ASTM D 790 - *** ISO 178

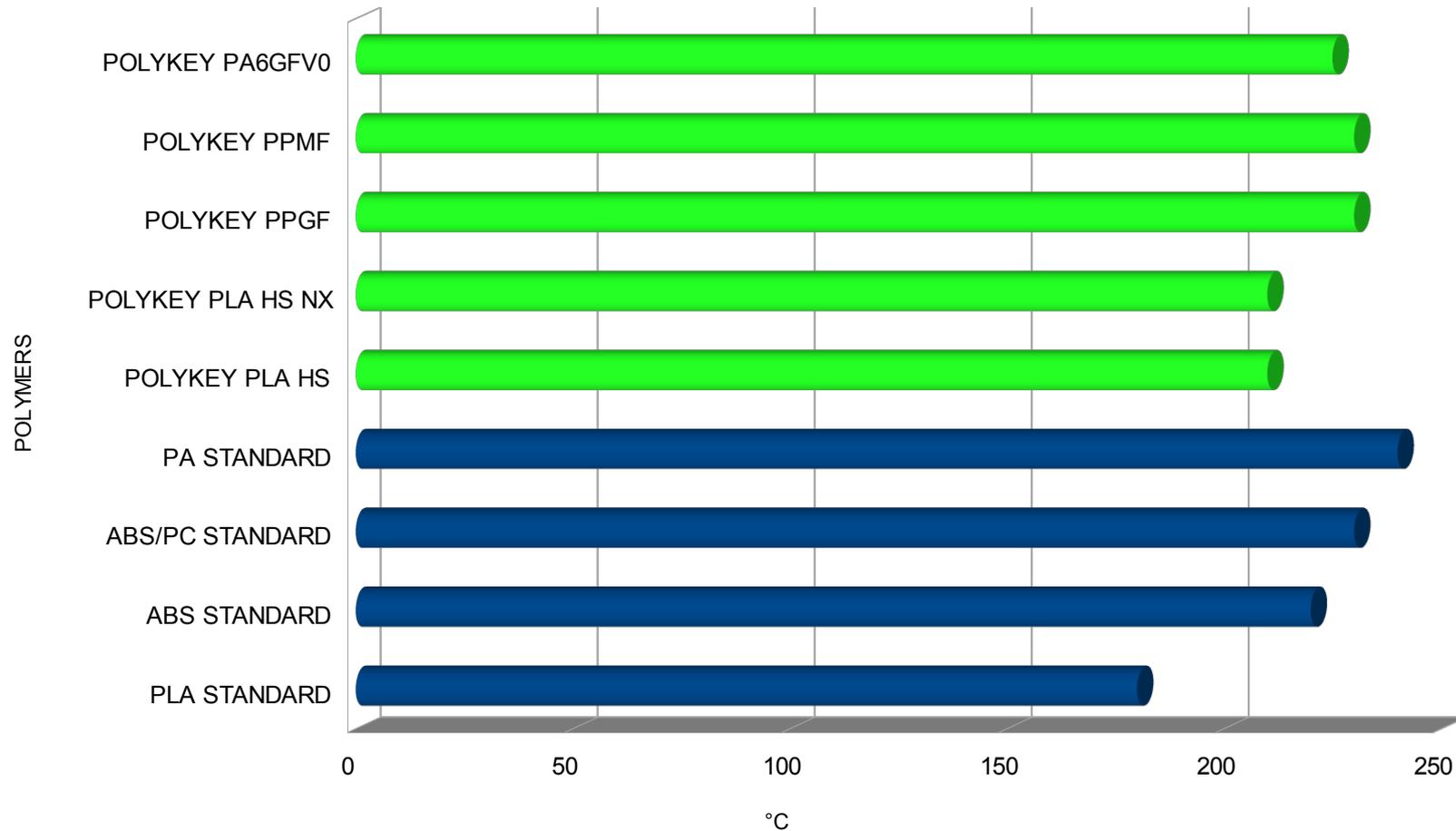




KEYTECH 3D PRINTING FILAMENT

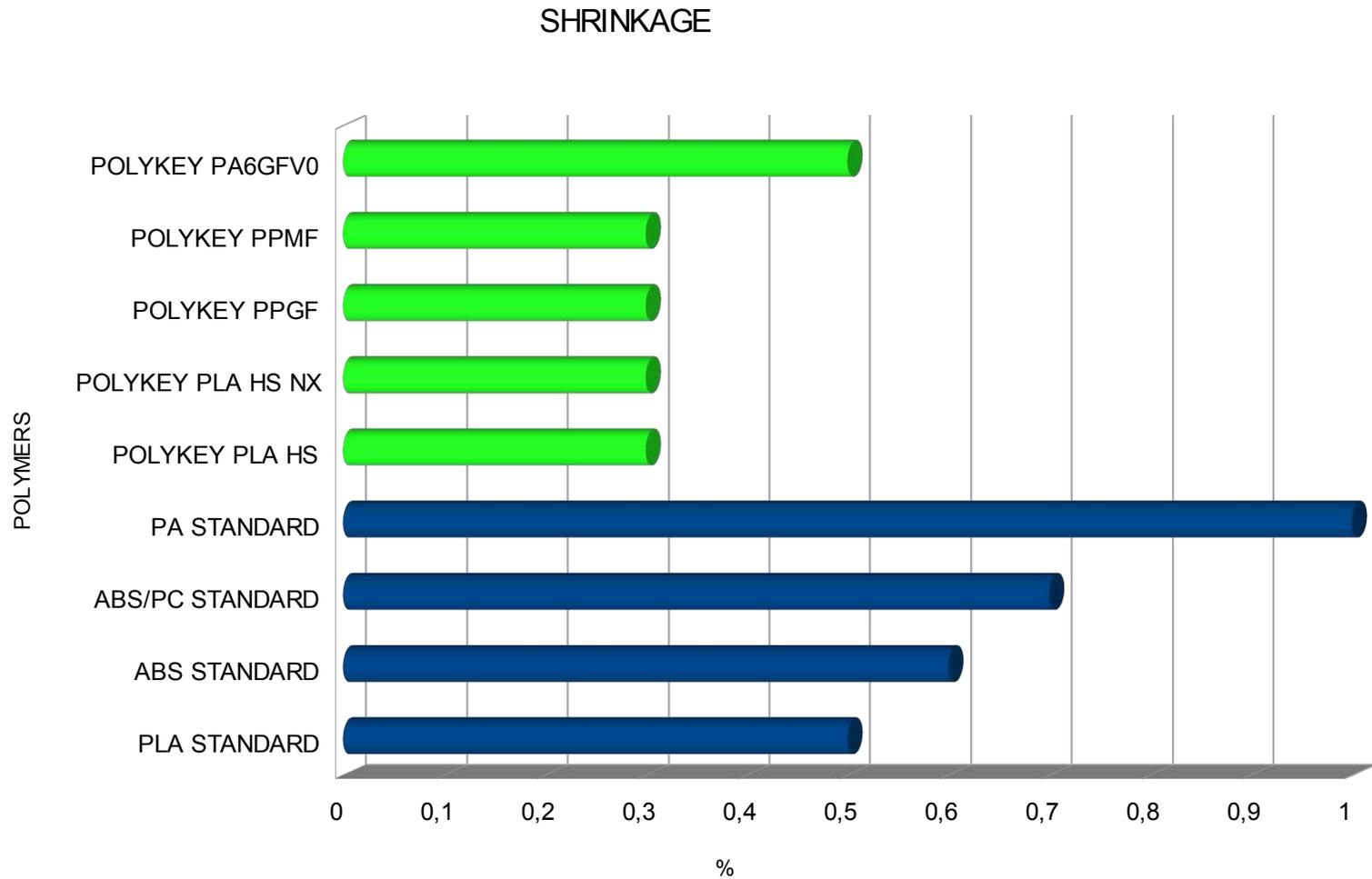
3D PRINTING TEMPERATURES

sub-title





KEYTECH 3D PRINTING FILAMENT





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moisture absorption

PLA STANDARD	++
ABS STANDARD	+
ABS/PC STANDARD	++
PA STANDARD	+++
POLYKEY PLA HS	+
POLYKEY PLA HS NX	+
POLYKEY PPGF	-
POLYKEY PPMF	-
POLYKEY PA6GFV0	+

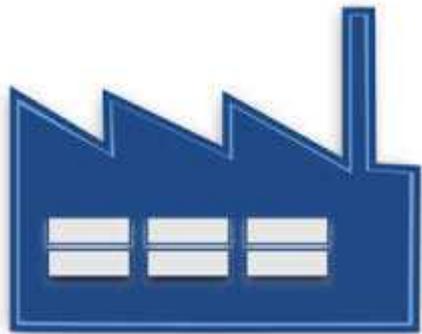
- lower + medium ++ high ++++ very high

PolyKeyY PPGF and PolyKey PPMF aren't hygroscopic polymers



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Keytech 3D Printing Filament Tailor Made



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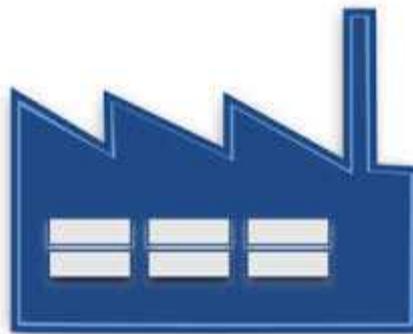
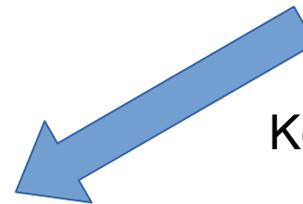
3D Printable Polymers



Tailor Made



Keytech 3D Printing Filament



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KEYTECH 3D PRINTING FILAMENT

When and Where could be use Keytech Tailor Made 3D Printing Filament

- have printed Parts with serial production polymers
- prototypes for UL 94 (flame retardant) test
- semi functional final test, like thermal test, painting test, weather test (not endurance)
- chemical resistance test with series polymers



KEYTECH 3D PRINTING FILAMENT

Printing info

Parameters	Unit	PLA HS	PLA HS NX	PPGF	PPMF	PA6GFV0
Filament diameter	mm	1.75	1.75	1.75	1.75	1.75
Nozzle diameter	mm	not less 0.35	not less 0.5	not less 0.5	not less 0.4	not less 0.5
Nozzle material	metal type	alu	steel	steel	steel	steel
Printing temperature	°C	190-220	200-230	200-230	200-230	230-245
Hot bed		no request	no request	suggested	suggested	request
Packaging*	grams	50	50	50	50	50
Dry before printing	°C x hours	no	60°C x 3 hours	no	no	80°C x 3 hours

* un-spooled loose coil into plastic bag inside carton box



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Stefano Corinaldesi
Mail: s.corinaldesi@gmail.com

