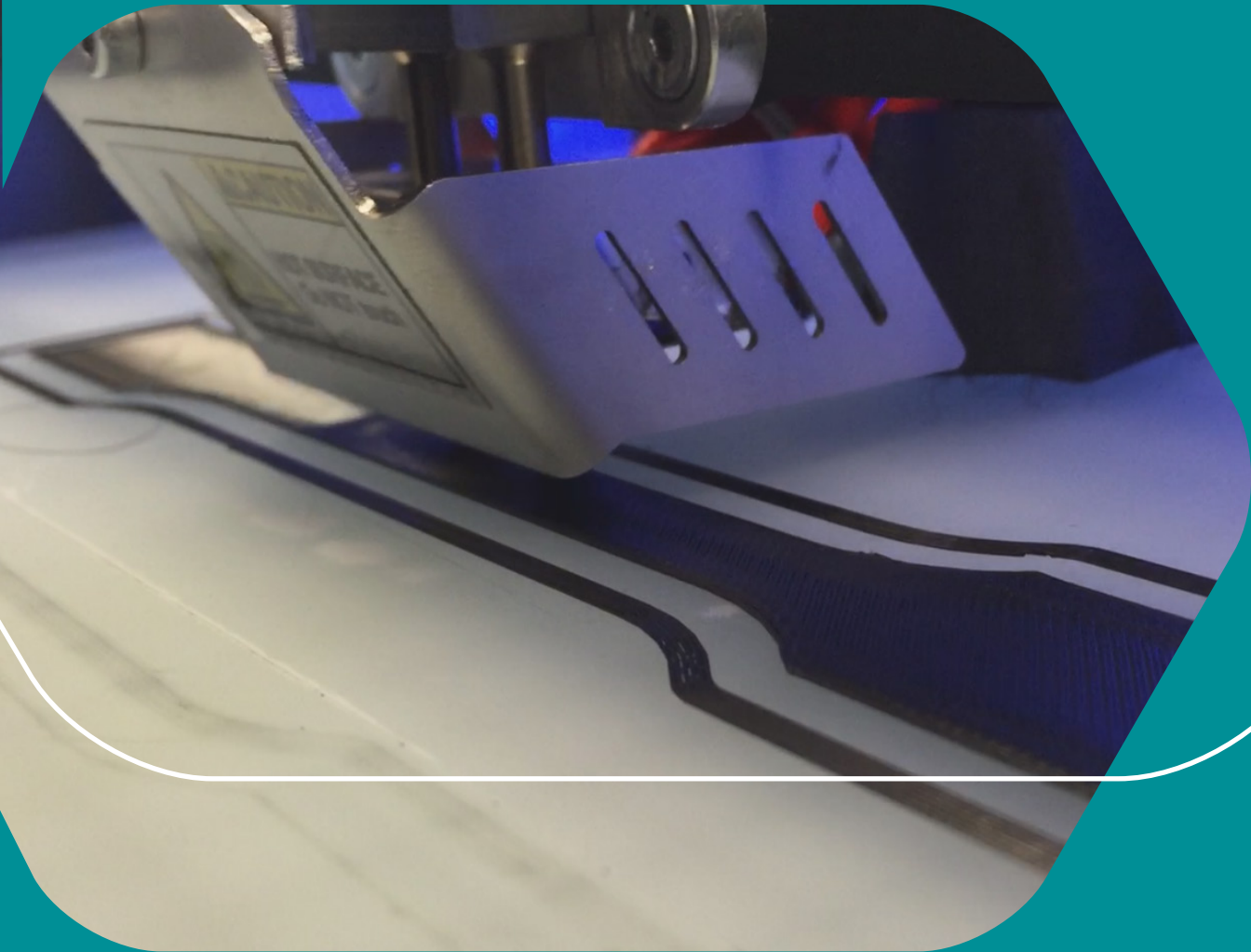


# Creating Material Change



## SynerG Conductive PLA Technical Data Sheet



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# Nanomaterial Enhanced Conductive PLA

Haydale's SynerG nanomaterial enhanced polylactic acid (PLA) filaments for 3D printing are improving the speed, strength, print quality and accuracy.

- Print electrically conductive components
- Faster and better print quality
- Excellent first layer and z-axis bonding
- Can be customised

## Product Information:

*Filament diameter*  
1.75mm

*Package size*  
400g reel

### Typical Physical Data\*

Properties	Units	Average Value	Method
Specific gravity at 20°C	g/cm <sup>3</sup>	1.22	Internal
Melt flow index (MFI)	g/10 mins	8.87	ASTM D1238, 190°C, 9.8k
Volume electrical resistivity	Ohm.cm	0.6	Internal
Odour	-	Almost odourless	Internal
Water solubility	-	Insoluble in water	Internal

### Typical Mechanical Data\*

Properties	Units	Average Value	Method
Tensile modulus at 23°C (filament, diameter 1.75mm)	MPa	4542	Internal using capstan grips
Tensile strength at 23°C** (filament, diameter 1.75mm)	MPa	60	Internal using capstan grips
Tensile elongation at break at 23°C (filament, diameter 1.75mm)	%	6.2	Internal using capstan grips

\* Typical properties only, not to be construed as specifications

\*\* Based on maximum measured stress

## Processing Information

SynerG PLA can be processed on all FDM/ FFF type 3D printers. SynerG PLA is typically extruded using a nozzle temperature of 200°C and a heated bed temperature of 58°C is recommended for good first layer adhesion in 3D printing. SynerG PLA can be extruded from 170°C, but processing temperatures must never exceed 220°C.

## Storage

PLA is a biodegradable thermoplastic polyester and will absorb moisture over time which can affect product performance. To ensure a good shelf life before use the 3D printing filament and pellets are packaged under a controlled vacuum and sealed to prevent moisture ingress. It is recommended that filament and pellets be kept in cool and dry conditions before use in 3D print melt extrusion and processing.

The content supplied in this technical data sheet ("Information") supersedes all previous versions supplied. Version 3, September 2019

The Information should be used solely as guidance for the safe handling, storage, processing and/or use of the Product and is only typical of the methods described. The Haydale Group (Haydale Group means Haydale Limited, as a subsidiary of Haydale Graphene Industries plc., and any subsidiary or holding company from time to time and any subsidiary from time to time of any holding company of Haydale Limited) gives no express or implied warranty or guarantee or representation as to the behaviour of the Product described herein during any handling or storage or processing or use of the Product. To the extent permissible by law the Haydale Group shall under no circumstances whatever be liable whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any damage, including loss of profit, or any indirect or consequential loss arising under or in connection with any handling or storage or processing or use of the Product.



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