



# Technical Data Sheet

## ABS by Innofil3D BV

Filament suitable for all commercially available leading brands 3D FDM/FFF printers

### IDENTIFICATION OF THE MATERIAL

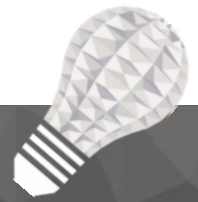
Trade name	Innofil3D ABS
Chemical name	Acrylonitrile Butadiene Styrene
Chemical family	Thermoplastic Copolymers
Use	3D-Printing
Company	Innofil3D BV

### GUIDELINE FOR PRINT SETTINGS

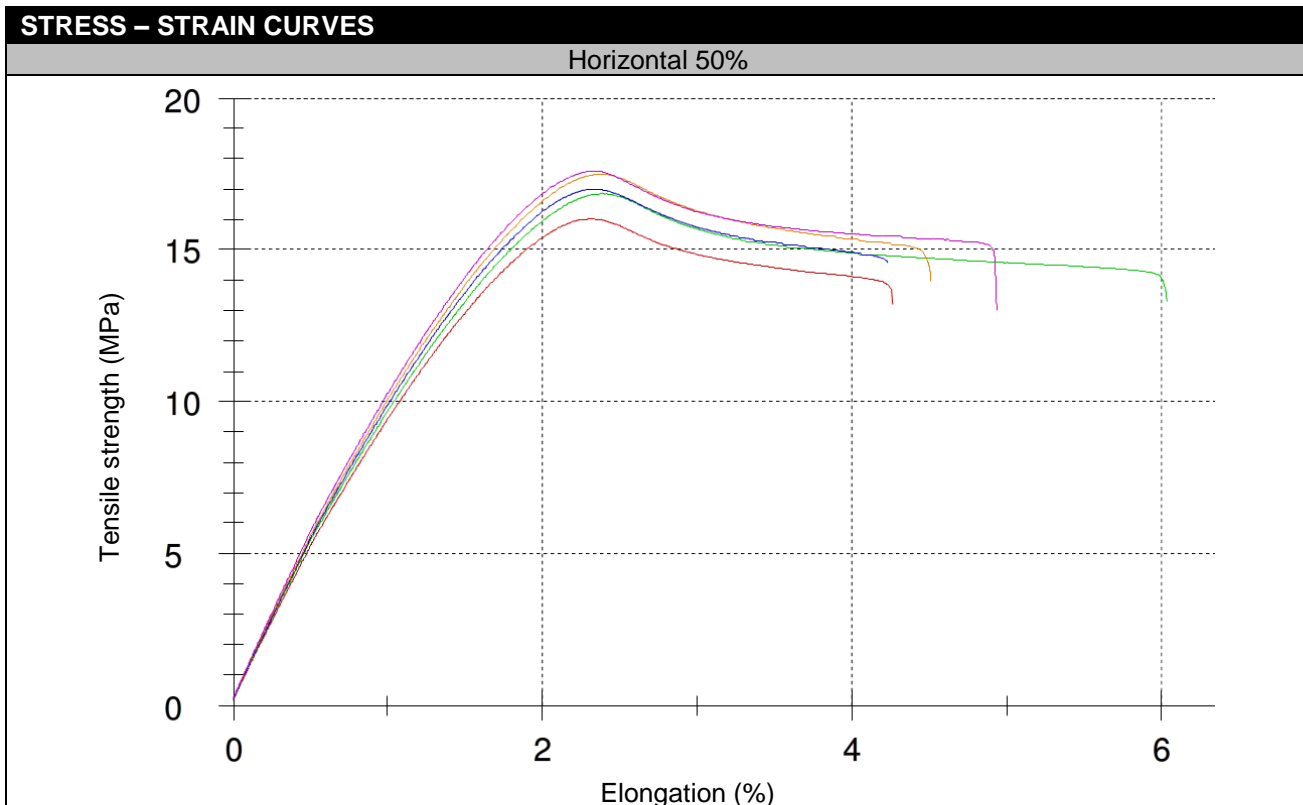
GUIDELINE FOR PRINT SETTINGS		Test Method
Nozzle temperature	240 ± 10 °C	Innofil3D
Bed temperature	80 – 90 °C	Innofil3D
Bed modification	Tape	Innofil3D
Active cooling fan	NO	Innofil3D
Layer height	0.08 – 0.2 mm	Innofil3D
Shell thickness	0.4 – 0.8 mm	Innofil3D
Print speed	40 – 80 mm/s	Innofil3D

### MATERIAL PROPERTIES

MATERIAL PROPERTIES		Test Method
Melt temperature	Not applicable	/
Glass transition temperature Tg	~ 105 °C	ASTM D3418
MFR		
MVR		
Density	1.05 g/cm <sup>3</sup>	ISO 1183-3
Odor	Odorless	/
Solubility	Insoluble in water	/



MECHANICAL PROPERTIES		Test Method		ISO 527	
<p>All test specimens were printed using an Ultimaker 2 under the following conditions: printing temperature = 210°C, heated bed temperature = 75°C, print speed = 40 mm/s, number of shells = 2, Infill under 45°</p>	 Printed vertical (Z-axis)		 Printed horizontal (X,Y-axis)		
	Infill	50%	100%	50%	100%
	Tensile strength (MPa)			16.98 ± 0.80	
Force at break (MPa)			13.60 ± 0.81		
Elongation at max force (%)			2.34 ± 0.068		
Elongation at break (%)			4.78 ± 0.91		
Relative tensile strength (MPa/g)			2.48 ± 0.0098		
Emodulus (MPa)			1072 ± 38		





FILAMENT SPECIFICATIONS		Test Method
Diameter 1.75	1.75 ± 0.05 mm	Innofil3D
Diameter 2.85	2.85 ± 0.05 mm	Innofil3D
Diameter 3.00	3.00 ± 0.05 mm	Innofil3D
Max. roundness deviation 1.75	0.05 mm	Innofil3D
Max. roundness deviation 2.85	0.10 mm	Innofil3D
Max. roundness deviation 3.00	0.10 mm	Innofil3D
Net weight on reel	750 g ± 2%	Innofil3D

LIST OF COLORS AND CERTIFICATIONS*							
Colour	Code	RAL nr.	Certifications/approvals				
			10/2011 <sup>1</sup>	FDA <sup>2</sup>	BfR <sup>3</sup>	2011/65 <sup>4</sup>	EN 71-3 <sup>5</sup>
Naturel	0101	N/A	Unknown	Unknown	Unknown	Yes	Yes
Black	0102	9005	Unknown	Unknown	Unknown	Yes	Yes
Red	0104	3020	Unknown	No	Unknown	Yes	Yes
Blue	0105	5022	Unknown	Unknown	Unknown	Yes	Yes
Yellow	0106	1003	Unknown	Unknown	Unknown	Yes	Yes
Green	0107	6018	Unknown	Unknown	Unknown	Yes	Yes
Orange	0109	2008	Unknown	Unknown	Unknown	Yes	Yes
Pink	0120	N/A	Unknown	No	Unknown	Yes	Yes
Silver	0121	9006	Unknown	Unknown	Unknown	Yes	Yes

\* This overview is generated using information obtained from the raw material suppliers.

\*\* RAL number used to manufacture the transparent colour.

Certifications/approvals	Description
<sup>1</sup> Regulation EU No 10/2011:	Union Guidelines on Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food (Europe)
<sup>2</sup> FDA:	Food and Drug administration approval (U.S.A.)
<sup>3</sup> BfR-empfehlung:	No migration of substances with a health risk occurs from the contact materials to the foods (Germany)
<sup>4</sup> Directive 2011/65/EU:	The restriction of the use of certain hazardous substances in electrical and electronic equipment (Europe)
<sup>5</sup> Directive 2009/48/EC; EN 71-3:	Safety of toys – Part 3: Migration of certain elements (Europe)