

# Buddy3D

Product card

ABS-ESD VE

## 1. GENERAL INFORMATION ABOUT THE PRODUCT

Buddy3D ABS ESD is an ABS (acrylonitrile butadiene styrene copolymer) with modification for electrostatic discharge safety. It can dissipate electric charges due to its lower electrical resistivity. Mechanically, it is stiffer than regular ABS filaments, which give it more flexural strength, but lower impact resistance.

### Main ABS-ESD features:

- Surface resistivity  $\sim 10^7$  Ohm
- Volume resistivity  $\sim 10^5$  Ohm
- Good mechanical strength, stiffness, and hardness
- Moderate impact resistance
- Good thermal stability

## 2. TECHNICAL PARAMETERS

CHARACTERISTICS	TEST METHOD	TEST CONDITIONS	IU	VALUE
	ISO			
<b>PHYSICAL</b>				
Density	ISO 1183	-	g/cm <sup>3</sup>	1.12
<b>MECHANICAL</b>				
Tensile strength	ISO 527	50 mm/min	MPa	39.6
Tensile elongation	ISO 527	50 mm/min	%	3.84
Tensile modulus	ISO 527	2 mm/min	MPa	3105
Flexural strength	ISO 178	-	MPa	72.8
Flexural modulus	ISO 178	-	MPa	3197
Notched Charpy Impact strength	179-1	1eA	kJ/m <sup>2</sup>	2
Unnotched Charpy Impact strength	179-1	1eA	kJ/m <sup>2</sup>	17.27
<b>ELECTRICAL</b>				
Surface resistivity	IEC 60093	-	$\square$	$10^7$
Volume resistivity	IEC 60093	-	$\square$ x cm	$10^5$

Tests have been done at 23°C if it's not marked differently.

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### 3. RECOMMENDATION OF PRINTING

#### Recommended parameters of printing:

Hotend temperature	240 – 265 °C
Bed temperature	90 – 105 °C
Print speed	< 200 mm/s

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### 4. SAFETY NOTES

Air filters in printer is recommended.

ABS ESD needs to be used only in well-ventilated conditions.

Inhaling fumes generated during the printing must be avoided.

Generating fumes during printing depends mainly on printing temperature. In case of visibly raising emission levels, the printing needs to end. Check the hotend temperature and efficiency of the control system before using it next time.

In proper use conditions, the product doesn't endanger health.

It's forbidden to set fire or exceed decomposition temperature!

The decomposition of ABS ESD is typically over 300 °C.

The main ingredient of decomposition is styrene.

Detailed safety information is available in SDS.