

3DXSTAT™ ESD-Safe PETG 3D FILAMENT

3DXSTAT™ ESD PETG is an advanced ESD-Safe compound designed for use in critical applications that require electrostatic discharge (ESD) protection. Made using cutting-edge multi-wall carbon nanotube technology, state of the art compounding technology, and precision extrusion processes. Target surface resistance: 10^7 to 10^9 Ohm.

Benefits of 3DXSTAT™ ESD-PETG include:

- Superior Chemical Resistance vs. ABS
- Amorphous: Low and near isotropic shrinkage
- Low moisture absorption: 3X lower vs. ABS
- Very low odor emitted during printing
- Superior ductility vs. ABS
- Wide processing range: 230 - 260°C
- Consistent surface resistivity
- Improved retention of impact & elongation
- Low particulate contamination
- Minimal contribution to outgassing and ionic contamination

Chemical Resistance: Unstressed tensile bars molded of PETG exhibit good resistance to dilute aqueous solutions of mineral acids, bases, salts, and soaps, and to aliphatic hydrocarbons, alcohols, and a variety of oils. Halogenated hydrocarbons, short chain length ketones, and aromatic hydrocarbons dissolve or swell the plastic.

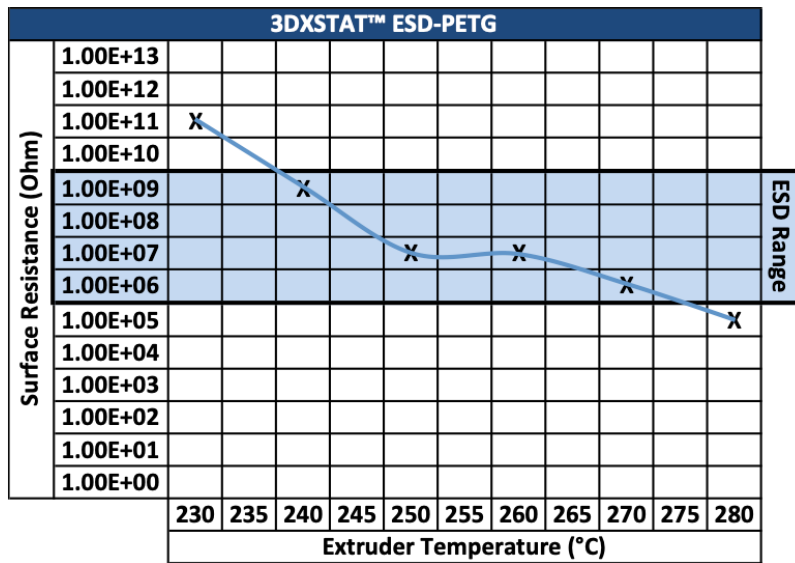
Typical applications include:

- Semi-con: HDD Components, Wafer Handling, Jigs, Casings, & Connectors
- Industrial: Conveying, Metering, and Sensing applications

Target conductivity for 3DXSTAT™ ESD PETG:

- 10^7 to 10^9 ohm surface resistivity on 3DP sample using concentric ring test method.
- Note: Internal studies have indicated that increased extruder temperatures can achieve higher levels of conductivity. Likewise, lower extruder temperatures have resulted in lower levels of conductivity. Each printer is set-up differently as well as varied part geometry. Therefore, expect some trial time to understand how this filament works in your specific printer / application. However, please do not exceed 270°C to reduce the risk of polymer degradation.

Surface conductivity as a function of extruder temperature:



The surface resistance of the printed ESD-safe part will vary depending on the printer's extruder temperature. For example, if your testing indicates the part is too insulative, then increasing the extruder temperature will result in improved conductivity. Therefore, the surface resistance can be 'dialed-in' by adjusting the extruder temperature up or down depending on the reading you receive on your part.

Recommended Print Conditions:

- Extruder: Ideally 230 to 260°C
- Platform Temp: 60 to 90°C
- Platform Prep: Clean glass w/ Kapton Tape, PVA-based glue, Hairspray