

# EP052509BK002-TDS

## COCOON PA-Especial(ESD)

COCOON PA-Especial (ESD) is an antistatic modified nylon material based on PA6, featuring excellent static resistance characteristics, with a volume resistivity of  $10^6$ - $10^7\Omega$ , effectively preventing the generation and accumulation of static charges. It is tough, impact-resistant, easy to print and mold, with a heat distortion temperature of  $160^{\circ}$ C, and offers excellent long-term heat resistance. This material is specifically developed for industrial applications requiring antistatic protection and is suitable for isolating containers or protective devices for precision electronic components, integrated circuits, hard drives, and other items with electrostatic protection requirements.

Part 1 Injection-Molded Specimen Performance

| Testing Items            | Testing Conditions | Testing Methods | Units   | Typical Values |
|--------------------------|--------------------|-----------------|---------|----------------|
| Physical Properties      |                    |                 |         |                |
| Density                  | 23°C               | ISO 1183        | g/cm3   | 1.31           |
| Melt Flow Rate           | 235°C, 2.16kg      | ISO 1133        | g/10min | 8              |
| Mechanical Properties    |                    |                 |         |                |
| Tensile Strength         | 5mm/min            | ISO 527-1       | MPa     | 85             |
| Elongation @ Break       | 5mm/min            | ISO 527-1       | %       | 5              |
| Flexural Strength        | 2mm/min            | ISO 178         | MPa     | 120            |
| Flexural Modulus         | 2mm/min            | ISO 178         | MPa     | 4500           |
| Impact Strength, Notched | 1J                 | ISO 179-1       | kJ/m2   | 30             |

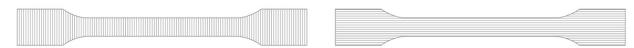
Note: The typical physical properties are not intended for use as sales specifications.



## **Part 2 Printed Specimen Performance**

| Testing Items                  | <b>Testing Conditions</b> | Testing Methods    | Units | Typical Values                   |
|--------------------------------|---------------------------|--------------------|-------|----------------------------------|
| Mechanical Properties          |                           |                    |       |                                  |
| Tensile Strength(X-Y)          | 50mm/min                  | ISO 527-1          | MPa   | 59                               |
| Tensile Modulus(X-Y)           | 50mm/min                  | ISO 527-1          | MPa   | 2800                             |
| Tensile Strength(Z)            | 50mm/min                  | ISO 527-1          | MPa   | 16                               |
| Tensile Modulus(Z)             | 50mm/min                  | ISO 527-1          | MPa   | 2500                             |
| Flexural Strength              | 2mm/min                   | ISO 178            | MPa   | 72                               |
| Flexural Modulus               | 2mm/min                   | ISO 178            | MPa   | 2500                             |
| Impact Strength, Notched       | 2.75J                     | ISO 179-1          | kJ/m2 | 32                               |
| Thermal Property               |                           |                    |       |                                  |
| Heat Deflection<br>Temperature | 1.8MPa                    | ISO 75-1           | °C    | 160                              |
| Electrical Properties          |                           |                    |       |                                  |
| Volume Resistivity             | 25°C, 50%RH               | IEC 62631-3-1:2016 | Ω     | 10 <sup>6</sup> -10 <sup>7</sup> |

Note: All specimens are printed under the following conditions: nozzle temperature =  $275^{\circ}$ C, printing speed = 105 mm/s, build plate temperature= $90^{\circ}$ C infill = 100%, nozzle diameter = 0.4mm.



Printing Path Direction of Specimen (Z)

Printing Path Direction of Specimen (X-Y)



### **Part 3 Printing Guidelines**

| Parameters                  | Settings                                   |  |  |
|-----------------------------|--|--|--|
| Nozzle Temperature          | 260-290°C                                  |  |  |
| Build Plate Temp.           | 80-100°C                                   |  |  |
| Build Plate Material        | Glass、PEI、Steel Spring Build Plate         |  |  |
| Bottom Layer Printing Temp. | 280-300°C                                  |  |  |
| Enclosed-chamber Printing   | Yes  |  |  |
| Print Speed                 | 60-150mm/s                                 |  |  |
| Drying recommendations      | 100-120 °C in a hot air dryer for 6-8hours |  |  |
|                             |  |  |  |

#### Disclaimer:

The values provided in this data sheet are for reference and comparison purposes only. They should not be used for design specifications or quality control. Actual values may vary depending on printing conditions. The ultimate performance of printed parts depends not only on the material but also on the part design, environmental conditions, and printing conditions. The product specifications are subject to change without notice.

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